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THE

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A Weekly Journal of Medicine and Surgery

EDITED BY

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Original Articles.

DIETETIC TREATMENT OF CHRONIC BRIGHT'S DISEASE.[1]

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THE proper dietetic treatment of chronic Bright's disease of the kidney is a subject of certainly as much practical importance as its medicinal management, or the rules pertaining to clothing and climate. It is, therefore, a somewhat remarkable fact that but little, relatively, has been written in regard to it, at least of an accurate kind. Especially is this statement true for the past few years, when so many treatises, articles, and discussions have taken hold of the disease in question, from many different aspects. The pure pathologist has, by means of the microscope, unravelled much that was previously obscure; the physiologist has dealt extensively with the sphygmograph and the effects of increased blood-pressure; and the clinician has discussed fully matters of heredity, etiology, and symptoms, and facts pertaining to urinary analysis, in which he has also been aided by the chemist. Remedial treatment, indeed, has been much studied, but particularly with reference to drugs, to venesection, to clothing, and to climate changes. Meanwhile the subject of dietetic treatment has only been touched upon, as it were, by many writers. In looking through quite a number of general and special treatises, in which chronic Bright's disease is exhaustively described in many other particulars, I have found comparatively little on the subject of diet. Even this little is usually diffuse, or scattered, and is presented to the reader in a somewhat casual manner. General statements are made, but few definite rules are laid down, and the student, after considerable labor and effort, is left somewhat in doubt as to the best regimen to adopt in treating chronic Bright's disease under different circumstances. To the above rather sweeping statement I must in fairness make a few notable exceptions, since in Dickinson's work on "Albuminuria," in Tyson's "Treatise on Bright's Disease," in George Johnson's "Lectures on Bright's Disease," in Bartel's work, which forms the fifteenth volume of "Ziemssen's Cyclopædia," in T. Grainger Stewart's "Lectures on Albuminuria," in Ebstein's, Granville's, and in Roose's recent treatises on gout and its treatment, there is much about suitable regimen that is of the highest value and greatest clinical and scientific accuracy.

During the past few years, however, in only one or two of the journals to which I have access, do I find more than very short remarks upon the dietary treatment of chronic Bright's disease. To this statement I again make a partial exception, inasmuch as an article will be found entitled, "On Diet in Albuminuria," in the *Boston Medical and Surgical Journal*, December 2, 1886, pp. 513–515, but even this article is translated from advance-sheets of a lecture by Dujardin-Beaumetz, of Paris. In this lecture references are made to the works of Semmola, to Senator, Bouchardat, Jaccoud, etc., and especially to a thesis (1885) of Nollet, "A Study on the Alimentary Regimen of the Albuminuric." Doubtless if my researches had been more extensive I would have found important data on this subject; but they would probably have been somewhat ancient and of slight value at the present time.

In Bartholow's "Materia Medica and Therapeutics," the latest edition, attention is directed to the great benefit derived from the milk-cure, the skim-milk cure, and the buttermilk cure, but without specifying any reasons for their advantages. Alcohol is also briefly spoken of somewhat as diet is by many writers, although the consensus of opinion certainly is that it is usually injurious in chronic Bright's disease. Some authors go so far as to affirm that it should never be employed. Others, more rationally, admit its utility, but in a guarded manner, and only when special indications exist, such as exhaustion, brain anæmia, cardiac weakness, etc. While a strict milk diet is generally praised, it is recognized, in some instances that patients soon tire of it, or it becomes so repugnant to them that they cannot take it in sufficient quantity; and to preserve their strength we are compelled to vary their alimentation. This addition to their food may be in the form of broths, eggs, farinaceous substances. fish, or meat. If admitted at all to the diet list, the amount of these aliments has been variously estimated. In allowing meat once a day, for example, it is claimed that if the amount of albumin excreted by the kidneys be large, it was obtained originally from the blood, thus notably impoverishing it, and it is wise to make good the deficit by a proper amount of azotized food. Without advancing any similar argument, I will add that some writers, like Granville, advocate an abundant, varied, and very nutritious diet—indeed, as much food "as the appetite demands or the palate desires."

We thus appreciate how uncertain our opinions must be as regards the subject of dietetic treatment of chronic Bright's disease, unless we make a careful study of it, and endeavor to lay down more accurate rules for our guidance. It is toward accomplishing this object, in part at least, that this contribution to the discussion this evening is made. The indications for proper dietetic treatment in chronic Bright's disease vary somewhat, of course, with the form and stage of the renal degeneration, as well as with the nature of the secondary complications which may be present. In each case presented to us, it seems of practical importance to discover, if possible, the probable cause of the actual disease, and the dietetic treatment should be directed more or less in accordance with the discovery made. Thus, if excessive eating or drinking be the obvious exciting cause, considerable limitations as to food and drink seem rational and well ordered. If gout be manifestly present, in an hereditary or acquired form, there are certain aliments and beverages that should be specially prohibited. I shall now proceed to consider, as well as I can, the dietetic treatment of chronic Bright's disease in three forms of renal degeneration which have been widely recognized.

I. Chronic parenchymatous nephritis (the large kidney without waxy degeneration).

II. Lardaceous disease of the kidney (waxy kidney).

III. Interstitial nephritis (the small granular kidney).

I. The first form may begin, as already stated, insidiously, as a chronic disease, or it may be a direct sequel of acute nephritis. The exact time when the kidney which has been affected with acute inflammation becomes a large white or mottled kidney, can scarcely be determined clinically in a very precise manner. Fortunate it is, therefore, that rules of diet which may be properly ap-

[1] Read at a meeting of the Practitioners' Society, November 16, 1888.

plied to this intermediate stage are equally good for the treatment of any chronic changes.

All dietary rules pertain to: 1. Food. 2. Drink. 3. Stimulants.

1. *Food.*—The best diet in chronic parenchymatous nephritis is generally recognized to be an exclusive milk diet. The reasons given for this preference and which appear to me important, may be enumerated as follows: (1) Milk is easily assimilated, and is therefore well adapted to a disease in which digestive disturbances are almost the invariable rule. These disturbances are, generally, as we know, of the nature of dyspepsia, nausea, vomiting, epigastric pains, etc. (2) If a suitable amount of milk be taken daily, it provides sufficient nutriment for the needs and proper support of the economy. (3) An exclusive milk diet forms less urea in the blood than any other form of alimentation. (4) Milk furnishes a large quantity of fluid to flush out the kidneys with, always supposing it is taken at short intervals and in fairly large quantities each time. In this way it increases urinary excretion by continued excessive pressure in the arterial system, and thus helps the dropsy to disappear by degrees.

The objections which are, or may be urged against an exclusive milk diet are: First, it is not tolerated by all patients. Some persons soon tire of it, or get a profound, unconquerable disgust for it. There are a few individuals, also, in whom, I am convinced, an idiosyncrasy has much to do with this distaste, and try as we may to get them to take milk in any useful quantity, we are finally obliged to abandon the effort in sheer despair of success. In either of these two contingencies, we are obliged to recur to the use of broths (chicken and veal), beef-tea, light farinaceous food, and other diluents than milk.

2. *Drinks.*—Of these the best is unquestionably pure water, preferably distilled, according to Dickinson, and of this about two or three pints daily may be advisable. Soda-water, or cream of tartar lemonade may also be permitted, if either stomachal intolerance or constipation be unpleasant symptoms in the case.

Another beverage used and recommended in Bright's disease by Professor Semmola, of Naples, is formulated as follows:

℞.	Sodii iodidi	gr. xv.
	Sodii phosphat	gr. xxx.
	Sodii chlorid	ʒ jss.
	Aqua fontana	Oj.

This may be drunk daily, pure, or mixed with milk if the taste is objectionable. Good effects are claimed from its use.[1] Personally, I doubt the utility of distilled water, as I believe its lack of aeration is a drawback to its potability and digestibility. Mere shaking it in contact with atmospheric air will not supply what is needed, and I object somewhat to artificially aerated waters made under pressure, as, I believe, they are apt, when taken in large quantities continuously, to distend the stomach and bowels with carbonic acid gas, and increase after a time the discomfort of the patient. I would recommend, after several satisfactory trials and on account of its great purity, limpidity, and perfect ease of digestion, pure spring water as being a very desirable beverage. The first great thing to accomplish is, at all events, to have these patients drink much pure water, up to several pints a day, and yet not upset an already weak digestion in doing it. The use of water abundantly as a diuretic in renal disease does not antagonize the principle of giving the kidney little or moderate work to do, as it is a physiological diluent, and does not occasion any irritation of the kidneys. Some other diuretics, among which we may at times place digitalis, are prone to induce this untoward effect, either directly or by increasing heart-action, and contracting the small renal arteries. This is not true, however, of mild alkaline water, soda-water, or cream of tartar solution with lemon in it (Imperial drink). By these different means a marked flow of urine is obtained and the kidneys are kept continuously flushed, so that the masses of degenerated epithelium which tend to clog the tubes are gotten rid of. In this manner any remaining congestion of the gland will be relieved by secretion, and the system will be cleared of impurities which previously had been retained. By the passage of a large quantity of fluid through the kidneys we also reduce to a minimum (dilute?) that nitrogenous excess which finds its way out through these organs, and gives rise to many sources of irritation. If at the same time we cut off the materials of urea and uric acid, we are doing the best we can accomplish (Dickinson).

Tolerance of milk, however, when pure milk is objected to, may often be obtained, if we mix it in certain variable proportions with lime-water, carbonic water, Vichy, etc., or give it in the form of peptonized milk or koumyss.[1] Whenever milk is well supported by the stomach it may be taken either skimmed or unskimmed, that is to say, with or without the cream. Unskimmed milk is advantageous, says George Johnson, because it prevents constipation. It is desirable, according to Tyson, because its nitrogenous principle, the casein, is present in a proportionately small amount as compared with skimmed milk. On the other hand, the stomach is often intolerant to rich milk, and the fatty elements in the cream are apt to occasion numerous dyspeptic symptoms, such as headache, heartburn, diarrhœa, etc. Under these circumstances the milk had better be skimmed rather than abandon it as the main article of diet. Even though we are obliged to do this, or to adopt many different methods to make milk tolerable to irritable stomachs, we should try all means which offer any chances of success before abandoning it altogether. Sufferers from chronic Bright's disease are so frequently affected with gastric symptoms which may prove both obstinate and distressing, that it will scarcely do to give up milk diet without a prolonged struggle to avoid it if possible. The probabilities are that many dyspeptic symptoms are occasioned by vicarious elimination, through the mucous membrane of the stomach, of impurities which normally are excreted by the kidneys. This is proven by the fact that the gastric secretions are at times mingled with the products of decomposed urea. Of course, when this is the case, relief should be sought, partly at least, in suitable diet, and iced milk in small quantity can occasionally alone be taken. If this fail us, nutritive enemata must be resorted to in order to sustain the patient until incessant vomiting be stopped. When taken, milk may be either warm or cold, as best suits the patient. It is usually found that if great irritability of the stomach be present, it is more acceptable cold, in small quantities and at short intervals. If it form the exclusive diet, it must be taken in fixed quantities and at specified hours. From a few ounces to half a pint, or one pint, may be taken every two or three hours by an adult. From two and a half to four quarts in the twenty-four hours are sufficient to prevent bodily loss and to keep its condition about stationary.

In children affected with chronic Bright's disease milk diet acts extremely well, and while they are upon it there is no need for them to have any other food or drink. Of course they will take less milk than adults in proportion to their ages. Clinically there is evidence to show that exclusive milk diet (or nearly so) reduces notably the quantity of albumin excreted by the kidneys. In order to prove this, if possible, to my entire satisfaction, I endeavored to obtain some careful observations in my medical service at St. Luke's Hospital, about two years ago. For the work done at that time I am indebted to Dr. E. B. Dench, who was then senior assistant in my wards. The report prepared at the date referred to, by Dr. Dench, was based on the medical records of St. Luke's, and was referred to by me, in a debate which took place on the subject of this paper, before the Academy of Medicine, at a Stated Meeting held March 16, 1886. A brief ac-

[1] Bull. Gén. de Thérapeutique, November 30, 1886. Boston Medical and Surgical Journal, loc. cit.

[1] I do not believe the small quantity of alcohol in the latter is ever injurious, and it is sometimes retained upon the most irritable stomach.

count of the discussion was published in THE MEDICAL RECORD, March 27, 1886, p. 372. From the printed text there found I take the following:

"During the last two years 70 cases of chronic Bright's disease have been treated—uncomplicated, 26; complicated, 44. In the great majority of the cases the diet was milk and farinaceous food. In several cases the addition of the farinaceous or nitrogenous food caused a diminution of the urinary secretion for twenty-four hours. In some cases such an addition increased the quantity of albumin in the urine. In one case the quantity of urine was increased by the addition of farinaceous food. The duration of treatment, dietary and medicinal, was from one to three months.

"To test roughly the effect of different kinds of dietary treatment on the amount of albumin excreted, Dr. Dench made experiments in three cases. The estimations of the albumin were volumetric, the Doremus test for urea was used. In Case I. the milk diet diminished the amount of albumin, and the addition of farinaceous and light diet (small quantity of meat) caused an increase in the amount of albumin. In Case II. there seemed to be no relation between the diet and the quantity of albumin in the urine. In Case III. albumin was increased after the addition of meat to the diet, except in one instance, the observations being made for several days."

In the cases reported by Dr. Dench, with the exception of the three experimental cases, as you will remark, medicinal measures were employed concomitantly with dietetic treatment, and it cannot therefore be accurately known from his summary of cases what results are due to drugs and how much to mere diet. The only manner, of course, in which reliable data of a desirable kind, in reference to this point, can possibly be obtained, would be by a series of carefully noted observations, based on cases treated solely by diet, and others in which medicinal agents were also employed. As a matter of corroborative experiment, and as an addition to our acquired knowledge, although there are but three cases in my experience, I would emphasize the statements made by Dr. Dench, in regard to the effect of diet without medicines as compared with those instances in which diet plus medicines have been employed, upon the excretion of albumin by the kidneys. Careful notes were also taken in one of our cases as to the amount of urea excreted while the patient was on different kinds of dietary regimen. From personal remembrance, and from a note received from Dr. Dench on November 12, 1888, it would appear that "the amount of urea was somewhat increased while the patient was on milk diet. . . . The experiments were not carried very far, as they did not seem to show much." The query may be made in some cases as to whether the increased amount of urea in the urine, when the patient is on milk diet, is evidence of the beneficial effect of the diet or not. Only continued and careful observations can always, in my opinion, solve this problem satisfactorily. It is certain that the small quantity of urea excreted by the kidneys often alarms us, since we feel confident that it must be retained in the blood, and to its great injury. Now, any dietary management which in these cases increases the amount of urea excreted, would appear to be beneficial; yet, on the other hand, those who see in a nitrogenous diet a faulty management of chronic Bright's disease, are led in part to this conviction by the observed increase of urea in the urine, which is so frequently found when such a dietary has been followed, and by their recognition that this fact clearly means increased work on the part of the diseased organ in question, viz., the kidney.

The prognosis, however, of chronic Bright's disease depends "not on the hyper-albuminosis, but on the more or less profound alterations of the kidneys, and the retention therefrom resulting of extractive matters, and of those toxic products which Bouchard has made known to us under the name of urotoxine. Uræmia, the terminal period of albuminuria, depends, then, not on the quantity of albumin contained in the urine, but on the state of the renal filter."[1] If this be admitted, is it not better for the economy to get rid of the poisonous products rather than to keep fast hold of them? and is not the renal filter presumably in better working order when it can perform its functions in a moderate rather than in a minimum degree?

The problem is obviously most difficult and many-sided. Suffice it for me to have at least indicated certain directions which discussion may profitably take.

The best results obtained by Tyson from an exclusive milk diet were when the patient remained in bed, and was thus completely at rest. This is not at all surprising, since we are all familiar with the supposed effect of bodily fatigue in augmenting albuminuria. Experimentally, Sparks and Bruce ("Med.-Chir. Trans.," vol. lxii., p. 254) have also shown the effect of an absolute milk diet in diminishing the amount of albumin excreted. This reduction likewise took place in a notable degree when an absolutely non-nitrogenous diet alone was allowed. The reduction obtained with absolute milk diet, in the case reported by them (of a patient suffering from chronic phthisis) was from a mean of $\frac{1}{6}$ to $\frac{1}{8}$ albumin in the urine; with ordinary diet (viz., a moderate amount of meat, with vegetables, abundance of milk and farinaceous food, no stimulants), from $\frac{1}{16}$ to $\frac{1}{30}$ on the first day of experiment, and from $\frac{1}{30}$ to $\frac{1}{40}$ on the second day of experiment. In this case, on the second day, the patient complained of a sensation of unsatisfied hunger and of sinking, and declared that he could not continue an absolute milk diet very long. The amount of milk given was probably too small, being four and a half pints.

The conclusions to be drawn are much in favor of milk diet. Considering that few patients in moderate health can tolerate a purely fluid diet for any length of time, the result of experiments suggests that the diet in albuminuria should consist of milk, at any rate as far as can be borne (Sparks and Bruce). In subsequent experiments ordinary diet plus water was tried against ordinary diet plus milk. The result was not in favor of addition of milk to ordinary diet, but rather the opposite, and would appear to indicate that to produce a diminution of albumin in Bright's disease milk must be given not to supplement, but to replace, to a certain extent, the articles of ordinary diet.

Experiments with non-nitrogenous diet, viz., mashed potatoes, water, arrowroot, rice, fat bacon, butter, fried cabbage, showed a reduction in the amount of albumin excreted. The effect of withdrawal of nitrogenous food on the excretion of albumin does not cease with restoration of nitrogen to diet, but persists for a certain period afterward. This is explicable on the assumption that albumin which passes out of the blood into the urine is in part residue of a *luxus consumptus* of nitrogenous food. Hence, when nitrogen is restored, the organism makes good its losses, and albumin does not reappear in urine until this process is completed.

Second conclusion: The effect of milk diet is not merely apparent and due to albumin being more than ordinarily diluted, for ordinary diet with an equal quantity of water did not produce the same result.

In this connection I desire to direct attention to some observations being made at the present time at St. Luke's Hospital, in my wards, upon a patient who is suffering from chronic Bright's disease. The history, and detailed observations on the urine are entirely the work of my junior assistant, Dr. W. H. Caswell, to whose courtesy and knowledge I am glad to express my indebtedness. The history reads as follows:

F. G——, admitted July 6, 1888, aged twenty-seven; single; English; waiter. Family history negative. Patient had rheumatism four and a half years ago, has never had scarlet or intermittent fevers; denies specific disease; had gonorrhœa two years ago; has used alcohol freely; no history of pulmonary or cardiac disease. For several years has been troubled with indigestion; no vomiting. Twelve

[1] Beaumetz, loc. cit.

days before admission, on getting up in the morning, he noticed swelling around his eyes. He went to work as usual; at night he noticed that his penis was swollen. The next day his feet and legs were swollen, and he had a dull pain and stiffness across his back. Has had some headache. He passes urine frequently, but a small quantity at a time; more now than at commencement of the attack; he has been in bed for five days.

On admission is well nourished; anæmic; bowels regular; appetite fair; tongue slightly coated; pulse, 66; respiration, 24; temperature, 99.2° F.; urine, 1.018, alkaline, forty per cent. albumin (roughly estimated by volume); no glucose, granular, nucleated, and fatty casts.

July 10th.—Urine, granular casts and red blood-cells. Physical examination: Heart, apex-beat diffused, by auscultation in fifth space outside nipple line; action slow; faint systolic murmur over pulmonary area. Lungs, liver, spleen, abdomen, negative; inguinal glands enlarged on right side; prepuce swollen; some œdema of legs; considerable œdema of feet.

Urine Record, with Esbach's Apparatus.

Date.	Specific gravity.	Ounces.	Albumin. Gms.	Remarks.
July 8	1018	48	7.14	Milk diet; distilled water q. s. to drink; infus. digit., ʒ ij. t.i.d.; rest in bed.
9	....	74	....	
10*	1011	105	5.74	
11	....	94	7.16	
12	....	102	....	
13	....	124	....	
14	....	98	6.15	
15	....	90	....	
16	....	93	....	Added liq. am. acet., ʒ ss.; tr. ferri chlor., ♏x. t.i.d.
17	....	88	....	
18	1007	76	....	
19	....	88	....	
20	....	77	....	
21	....	72	....	
22	....	106	....	
23	....	86	....	
24	....	76	....	
25	....	50	4.48	Nearly same quantity of urine in bulk as on July 8th, but amount of albumin excreted about forty per cent. less. Query: Was it the effect of diet, or of medicine, or both, or the whole course of treatment, including rest?
26	....	74	....	
27	....	78	....	
28	....	74	....	
29	....	74	....	
30	1009	68	5.50	
31	....	74	....	
Aug. 1	....	60	..	
2	....	46	3.72	Same query as above. Lowest figure of albumin reached.
3	....	51	....	
4	....	66	....	
5	....	72	....	Allowed up; sat up.
6	....	60	....	
7	....	48	....	
8†	1013	76	8.03	Three days' sitting up shows effect in more than doubling the quantity of albumin excreted.
9	....	46	....	
10	....	56	....	
11	....	58	....	
12	....	47	....	
13	....	44	....	
14	....	62	....	Added hg. bichlor., gr. 1/128; elix. cinchona, ʒ j.
15	1009	54	5.77	Continuously sitting up when he desired, *i.e.*, most of daytime, and yet quantity of albumin again diminished.
16	....	39	....	
17	....	48	....	
18	....	47	....	
19	....	34	....	
20	....	34	....	Infus. digit., ʒ iij. Urine increased merely.
21	....	64	....	
22	....	59	....	
23	....	40	....	
24	....	56	....	
25	....	65	6.51	Stop infus. digital. ℞. Tr. digit., ♏xv. t.i.d. Albumin again going up. Cause?
26	....	44	....	
27	....	42	....	
28	....	54	....	
29	1012	40	3.85	Amount of albumin at almost lowest point. Query: Was it the effect of tr. digitalis?
30	....	32	....	
31	....	58	....	
Sept. 1	....	43	....	Stop liq. am. acetat. ℞. Pot. citrat., gr. xx. t.i.d.
2	....	43	....	
3	....	40	....	Light diet, without meat (but everything like bread, eggs, vegetables, etc.).‡
4	....	38	....	
5	....	80	....	
6	....	72	....	
7	....	68	....	
8	....	90	....	
9	....	92	....	
10	....	74	....	
11	....	56	....	
12	....	43	6.94	Amount of albumin again increased. Was it the effect of light diet, including eggs?
13	....	80	....	
14	....	36	....	
15	....	59	....	
16	....	47	....	
17	....	47	....	
18	....	61	....	

* From July 10th to July 30th, lower specific gravity with 68 ounces than with 105 ounces, after expiration of twenty days' treatment. Query: Does it show advance of disease.

† From August 8th, specific gravity increased (?) by amount of albumin and other solids (urea, extractives, etc.); when figured out in regard to quantity of urine passed, shows normal specific gravity; amount of albumin brought it up apparently, and not other solid constituents.

Urine Record, with Esbach's Apparatus—Continued.

Date.	Specific gravity.	Ounces.	Albumin. Gms.	Remarks.
Sept. 19*	1012	64	7.56	Amount of albumin, under similar conditions, increasing.
20	....	72	....	
21	....	51	....	
22	....	60	....	
23	....	72	....	
24	....	85	....	
25	....	71	....	
26	....	51	....	
27	....	60	....	
28	....	54	....	
29	....	58	....	
30	....	59	12.58	Amount of albumin very greatly increased under similar conditions. Been allowed to walk about, but time of beginning to walk not known—probably was walking on August 29th, when quantity of albumin excreted was small.
Oct. 1	....	49	....	
2	....	72	....	
3	....	56	....	
4	....	56	....	
5	....	58	....	
6	....	42	....	
7	....	52	....	
8	....	48	....	
9	....	48	....	
10	....	36	....	
11	....	43	....	Stop tr. digitalis. ℞. Caffein, gr. ss. q. 2 h.
12	....	46	....	
13	1015	48	9.98	Albumin diminished since last note. Caffein the cause? Resumed milk diet.
14	....	74	....	
15	....	74	....	
16	....	84	....	
17	....	82	....	
18	1009	84	7.63	Albumin diminished.
19	....	72	....	
20	....	86	....	
21	....	64	....	
22	....	76	....	
23	....	86	....	
24	1010	79	7.34	Albumin diminished.
25	....	93	....	
26	....	88	....	
27	....	50	....	
28	....	76	....	
29†	....	105	....	
30	....	96	....	
31	....	99	....	
Nov. 1	....	103	8.78	Albumin again increased.
2	....	156	....	
3	....	152	....	Added mg. sulph., ʒ ij. Om. mane.
4	....	130	....	
5	....	136	....	
6	....	116	....	
7	....	140	....	
8	....	117	....	
9	1009	118	11.07	

In analyzing this history carefully we note the following facts: Patient put on a milk diet with distilled water q.s. to drink, rest in bed, infusion digitalis, liq. ammon. acet., and tr. ferri chlor. from July 8th to July 25th. At last date bulk of urine nearly the same as on July 8th, but amount of albumin excreted about forty per cent. less. Query: Was it effect of diet, of medicine, of rest, or all combined? During twenty days of the same treatment, from July 10th to July 30th, the specific gravity of the urine had became lower. Does this show advance of renal changes despite the fact that amount of albumin excreted on days mentioned was about the same?

On August 8th, patient had been sitting up during three days, and the amount of albumin excreted was more than doubled. On August 15th, patient still sitting up, and yet amount of albumin again notably diminished. On September 3d, light diet allowed without meat. On September 12th and 19th, amount of albumin estimated, and found to be notably increased. It was again estimated on September 30th, and found very much increased. From September 3d to September 30th, patient had same medicinal treatment as on August 29th, and from that date to September 3d. Yet on August 29th the quantity of albumin excreted was much smaller than on September 12th, 19th, and 30th. Inference to be made is clearly that light diet had increased amount of albumin excreted in twenty-four hours. It should be noted that patient had been permitted to walk about, but he was also walking about on August 29th, when quantity of albumin excreted was small.

On October 13th, 18th, and 24th, same light diet, but on each occasion amount of albumin was found to have diminished, and that too, progressively. The medication, however, had been changed from digitalis to caffein.

* From September 19th, specific gravity under normal.

† From October 29th to November 9th, amount of urine greatly increased, but albumin also. Query: Is amount of increase in bulk caused by caffein, or by caffein and mag. sulph.?

On November 1st, same light diet (everything like bread, vegetables, eggs, etc., without meat) and caffein, yet albumin excreted had increased in amount. I believe it will be admitted that this case is somewhat unsatisfactory in regard to any absolute diet-theory, because, while at one time light diet seemed undoubtedly to cause increase of quantity of albumin excreted, at another time the albuminuria with the same diet decreased progressively. It is true the medication was changed, and hence we remain in doubt as to the effect of the diet alone on the amount of albuminuria. The third conclusion of Sparks and Bruce is to the effect that "eggs in excess did not reduce the quantity of albumin in the urine." Nor should we expect that they would? On the contrary, we should expect that eggs would notably increase the amount of albumin in the urine. The experiments of Legart, Brown-Séquard, Hammond, Stokvis, and Claude Bernard, prove this. "Of things prohibited," Dujardin Beaumetz[1] "places eggs first in the category."

Uncooked eggs are worse, but "it is better to be chary in the employment of eggs, even when cooked, in albuminuria." On the other hand, Löwenmeyer[2] concludes, as a result of his experiments, with the addition of six to nine eggs a day to the dietary, "that an alimentation even very rich in albuminoid matters causes no increase in the amount of albumin in the urine."

After a time an exclusive fluid diet may do harm to the patient by occasioning a superabundant secretion of urine, and in this way, also, too great elimination of albumin from the system. It is also found that, in those individuals whose stomachs have already become very sensitive, great dilution of the gastric juice will give rise to dyspeptic symptoms.

When, in addition to these, or, indeed, independently of them, symptoms of general anæmia, exhaustion, etc., become manifest, and especially if the quantity of albumin in the urine be small, the exclusive milk-diet should be supplemented by a due proportion of farinaceous or vegetable food. Finally, even this diet may become objectionable, as it obliges the stomach and intestines to perform more work than they can properly accomplish, and whenever this condition is tolerably evident a moderate amount of broiled or roast meat should be allowed daily. The time at which meat is taken is not an indifferent matter, and, in my judgment, it should form part of an early dinner, which may include a slice of bread with a little butter. The rule here laid down is a good one to be followed, even by gouty patients, and despite the fact that meat is recognized by nearly all observers, in its quality of a most highly azotized substance, as increasing the quantity of urea and analogous compounds in the blood, which the kidneys in their disabled condition are unable entirely to excrete. While meat, therefore, under the circumstances mentioned, may be allowed in moderate quantities, more than this would unquestionably aggravate the situation. Although this is true, we would not have the same reason to fear uræmic symptoms in this form of kidney disease as in interstitial nephritis or so-called gouty kidney. According to Fagge,[3] the generally received opinion in regard to this matter is erroneous. He writes as follows: "The statement commonly made, that this form of kidney disease (cirrhosis of the kidney) is the one above all others in which uræmia is apt to occur, appears to be traceable to the fact that the advanced stages of parenchymatous nephritis have been so generally mixed up with it."

In those cases in which the disease is progressing satisfactorily dropsy disappears, while albumin is still present in the urine. It is important for the patient at this period to avoid any errors of diet until the urine has regained its normal character.

Stimulants.—As a rule, all stimulants are injurious in the dietetic treatment of chronic parenchymatous nephritis. In any form alcohol increases the work of the kidneys, augments the quantity of urea in the blood, and promotes increased excretion of albumin. Claret and the light French and German wines are perhaps the least objectionable. Gin, or whiskey much diluted, are occasionally of value as diuretics. It may be stated as a cardinal law that the non-inebriant drinks alone are those which have no harmful effects, or are, as a rule, of any special utility. Even a small quantity of certain wines, like Moselle, Madeira, or Champagne, will increase immediately and considerably the quantity of albumin excreted. According to Sparks and Bruce, the most injurious of all stimulants in this respect is Madeira. In regard to the question of using alcohol, it should be continually borne in mind that its consumption, by the extra work it imposes on the kidneys, is opposed to the principle of lessening as much as possible the labor of the altered gland-tissue. It should also be remembered, particularly among the lower classes, that excess in taking alcohol has been believed by many distinguished observers to be one of the most frequent causes of albuminuria. If this view be only at times correct, it may be inferred in certain cases that a moderate employment of alcohol may tend to "perpetuate and aggravate" the disease when it is obviously due to other causes. It is further proven by clinical experience that alcoholic stimulants produce greater and more pernicious effects when there are considerable renal changes than would result from an equal quantity given when the kidneys are in a normal condition. Despite all these objections, conditions may arise when alcoholic stimulants are imperatively called for. Such instances are those which occur whenever great exhaustion is present, as by reason of blood-losses from albuminuria; and in instances in which there is profound anæmia, particularly of the brain. This condition is often, as we know, the accompaniment of threatened uræmic symptoms, viz., convulsions, dyspnœa, etc., when the economy is literally poisoned by retained urinary excreta. Under these circumstances alcoholic stimulants are needed, and may be given as freely as the occasion seems to require. In some instances, no doubt, the uræmic attack may be aborted, owing to the fact that more blood is sent to the brain, which is deprived of it, and the heart, which is beating rapidly and feebly, is strengthened and great temporary relief is thus afforded. In these cases we should scarcely look for much help from malt liquors or wines, but must place our reliance upon the strongest alcoholic liquors, viz., brandy or whiskey.

II. The dietetic treatment of lardaceous disease of the kidney depends somewhat upon its cause, if it continues to be present. If it be phthisis, abundant and nourishing food should be given, of which milk and cream should form a large portion, but meat should not in these cases be denied, while alcohol should be allowed in moderate quantities, and good wine is often a great boon to the sufferer. In this manner the loss the general system suffers from profuse suppuration is in some degree compensated. From a theoretical stand-point, a good beef-extract is useful, as an addition to daily diet, by reason of the saline constituents of beef which it supplies in a concentrated form. When the disease has disappeared which has been the cause of the renal changes, the dietetic regimen should not differ materially from that which I have counselled for parenchymatous nephritis.

III. The dietetic treatment of interstitial nephritis should have mainly in view: 1. To maintain the integrity of the blood by preventing the accumulation of urea and allied compounds. 2. To compensate the loss by albuminuria.

As regards the food, we should be particularly careful in its choice, for the reason that the patient's appetite is often good, and nutrition may be kept up without causing unnecessary risks. It is all-important to bear in mind that the urea which accumulates in the blood is largely formed from nitrogeneous food, and is increased in pro-

[1] Loc. cit.
[2] THE MEDICAL RECORD, December 11, 1886, p. 657. Lyon Médical, No. 38, 1886.
[3] Practice of Medicine, vol. ii., pp. 494, 495.

portion to the amount of this kind of food taken. Of course, the more urea accumulated the more the kidneys are called upon to work to eliminate the excess through their excretion. It is neither possible nor desirable to prohibit all nitrogeneous food, yet it is evident the amount allowed should be very moderate. In place, therefore, of considerable meat-diet, milk and cream should be supplied abundantly, and the other necessary elements of food should be obtained from the vegetable kingdom. While it is admitted that a diet thus formulated may not give the greatest physical strength, it will at least maintain the nutrition in fairly good condition. It is also widely accepted that patients thus treated may apparently enjoy tolerable health during many years. In the latest contribution on this subject from a distinguished investigator and writer,[1] I find the following: "The degree of restriction, speaking of proteid substances, should be determined by the seriousness of the symptoms. Their use should at least always be moderate. In advanced stages of the disease a pure milk-diet, at least during a continuance of the serious symptoms, should be adopted. . . . One of the advantages of milk is its diluent effect, affording solution for the solids and facilitating their removal."

Moderate dilution of milk with Vichy water is, according to Tyson, more beneficial than skimmed milk, and this addition of Vichy is particularly useful whenever there are objections to milk, as it renders milk "more palatable and more easily digested."

3. *Stim'ants.*—As I have said in speaking of chronic parenchymatous nephritis, alcoholic stimulants should be avoided as far as possible. Malt liquors, if, as often occurs, the case be complicated with gout, should be strictly prohibited. The light wines, and especially Bordeaux, or Rhine wine, may occasionally be permitted, but even then they must be sparingly used. In the treatment of uræmia it is often indicated, however, to give the stronger alcoholic stimulants promptly, and with a free hand. Of these gin and whiskey are perhaps the least injurious.

In conclusion, it may be of interest to quote, almost literally, the views of some distinguished modern authors in this matter of the dietary management of chronic Bright's disease:

Senator is of the opinion that meat should be almost completely suppressed from the diet of the albuminuric, while, on the other hand, he recommends a vegetable diet as well as fats. Beaumetz upholds Senator's views in part. Among vegetables he refers to the important rôle of the onion (bulb of *Allium cepa*) in the treatment of albuminuria. Among meats, he is "in the habit of recommending to his albuminuric patients to eat ham or roast pork, and the fatter the better." Senator counsels fish; Beaumetz opposes its use. He also proscribes cheese as being "a highly azotized nutriment."

Dickinson[2] says that in nephritis "spare diet and spring water, clear, may often be found sufficient though simple remedies." In granular degeneration "the food should be as non-nitrogeneous as is consistent with the proper nutrition of the patient. A purely vegetable diet has been tried and found not to succeed, and the anæmic tendencies of the complaint forbid the use of a non-nutritious regimen. At the same time, it is obvious that the patient should be kept upon the smallest amount of animal food upon which he can thrive."

In lardaceous disease "the diet may be more liberal than where uræmia is to be more feared."

Fagge[3] devotes fifty-nine pages to the consideration of Bright's disease, and does not give one word to its dietary management. The editor of Dr. Fagge's treatise merely speaks of the utility of "strict diet," and that is all.

Loomis[4] says: "Milk should be the principal article of diet."

Bartels recommends, in chronic inflammation of the tubules, a milk-diet as essential; in cirrhosis of the kidney, he "advises to sustain the strength by abundant meat, milk, and mixed vegetable dietary. In waxy cases he praises the effect of vigorous diet of meat and milk, with the use of good wine."[1] T. Grainger Stewart[2] found in chronic inflammation of the kidneys "that milk-diet or low diet are better suited to such cases than ordinary or ample diet." In cirrhosis of the kidneys he says that "the diet is a less important element than it is in tubular inflammation. In waxy cases "good nourishment is not contra-indicated by the state of the kidneys." Fothergill's dietary of Bright's disease consists mainly of fat, fish, vegetables, and farinaceous substances.

Delafield[3] writes, in chronic parenchymatous nephritis "improve the digestion." In chronic diffuse nephritis "a regulated diet" is "sometimes of service." In uræmic attacks "the patients must be fed with small quantities of fluid food, or of prepared meat."

Strümpell[4] writes, in subchronic and chronic forms of nephritis a milk-diet is to be carried out as far as possible. In contracted kidney "the diet must be carefully regulated, and must be of scant measure or abundant and strengthening, according to the patient's physical constitution. In these cases, too, milk is the chief food to be considered."

Flint[5] says, in chronic Bright's disease "alimentation should be as abundant and nutritious as the powers of digestion will admit of. Milk may with advantage enter largely into the diet in the different forms of Bright's disease. It is important, if the degree of albuminuria be great or considerable, to make up this loss by a highly albuminous diet," etc.

Further quotations would be tedious.

[1] Tyson: University Medical Magazine, vol. i., No. 2.
[2] Diseases of the Kidney and Urinary Derangements. Part ii., pp. 348, 452, 526.
[3] Practice of Medicine, pp. 444 to 503.
[4] Diseases of the Respiratory Organs, Heart, and Kidneys, p. 515.

ON THE TREATMENT OF THE ACUTE STAGE OF TRAUMATIC TETANUS.

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The treatment of traumatic tetanus is a study in toxicology—a question of poisons and antidotes. For I assume in the outset that the disease itself is, in fact, the manifestation of a poison due to the tetanus germ, and produced by the formation of ptomaines as a sequence of its germ origin. The demonstration that tetanus is a blood-disease, infectious and inoculable, the discovery of its germ origin in a bacillus, and, finally, the separation from germ cultures of three or four poisonous substances, or alkaloids, called tetanine, tetano-toxine, and spasmo-toxine, the first of which produces tetanus, the second giving rise to tremors, paralysis, and convulsions, the third inducing heavy tonic and clonic spasms, form a chain of evidence extending from the discoveries of Nicolaiev, in 1884, including the investigations of Carle and Ratione, Rosenbach, Terrari, Hocksinger, and Shakespeare, and bringing the subject down to the analyses of Brieger in 1887. As these facts bearing upon the modern aspect of the etiology and pathology of the disease are all matters of record, and doubtless familiar to most of you, they need not detain us. They serve, however, to substantiate the assertion that in the treatment of tetanus we have to deal with a toxic condition.

The interval between the traumatism and the appearance of tetanus varies from three to fifteen days in the majority of cases, a period of incubation during which we must assume that the peculiar poison of tetanus is being elaborated in the system. Of this process we know as yet but little. The fact that a high temperature destroys the tetanus germ points to a possible local prophylaxis in the

[1] T. Grainger Stewart: Lectures on Albuminuria, p. 201. New York, 1888.
[2] Loc. cit., pp. 205, 206, and 207.
[3] Pepper's System of Medicine, vol. iv., pp. 81, 97.
[4] Text-book of Medicine, pp. 803, 811.
[5] Practice of Medicine, sixth edition, pp. 894, 895.

primary dressing of wounds, but we are not prepared to offer an opinion as to the efficacy of our present methods of antiseptic surgery as a means of prevention.

It has been wisely said that the healthy working of a nervous centre requires two qualities, namely, a power to act when called into play and a power of remaining at rest. The one is as necessary as the other. In tetanus this power of remaining at rest is lost. Inaction becomes impossible because excitation is constant, and even when the toxic contractions diminish in force, nervous energy accumulates during the remission, to be discharged later on as a paroxysm of increased tension or spasm. The disease has a duration, in average cases, of three or four weeks. There seems to be a definite limit to the production of toxic material, and the disease "runs itself out" and terminates in recovery under certain conditions. That these conditions are not often fulfilled is shown by the mortality, which Gowers places at nearly ninety per cent., a rate that is a sufficient warrant for better and more systematic methods of treatment. The period of the greatest mortality is during the first week of the disease. Cases that reach the eighth day are likely to reach the fourteenth, and cases that reach the fifteenth day are likely to recover. The fact that the disease is a self-limited one should encourage the hope of a successful treatment, provided the patient can be protected against its force for a definite period, and the mortality lists show that this definite period consists of the first and second weeks of the disease, the acute stage of tetanus. Recovery, therefore, depends mainly upon the treatment during this time.

It is admitted that we can neither eliminate nor destroy the poison of tetanus. The disease once started is beyond the reach of direct methods of antagonism, but when we consider the limitation of the disease, and the fact that its activity is expended upon the cord and medulla, we are led to the inference that if we can so act upon the central nervous system that the force of the disease is spent upon a benumbed tissue, if we can so modify the functions of the cord as to materially diminish its reflex excitability until the nerve-storm has passed, we shall accomplish the plainest and most essential feature of treatment. The problem before us, therefore, is how to put the cord and medulla "in splints," physiologically, to do this in the shortest possible time, and to maintain this condition of modified function for at least two weeks.

Since this treatment demands the heroic use of remedies that are not always safe, even in ordinary therapeutic doses, we must obtain as clear an idea as possible of what the remedies are expected to accomplish, and how far we can venture to use them. I do not believe that it is possible, except by profound anæsthesia, to obtain complete relaxation of all the muscles in the first period of an acute case of traumatic tetanus without incurring as much danger from the remedy as from the disease. The object of treatment is not to abolish the manifestations of the disease, but to control them to such a degree as to maintain a relatively safe condition long enough for the disease to expend itself. This requires a brief consideration of certain clinical features that appear to serve as an index to the effect of treatment, and you will note, of course, that neither the pulse, temperature, respiration, nor pain are accepted as of any special value in this direction while the manifestations of the disease upon the muscular system are emphasized because of their clinical significance. Beginning with mere stiffness of the jaws and neck, the muscular tension increases and involves the muscles of the abdomen and chest. At times a sudden increase in the degree of this tension occurs, as a paroxysm or convulsive spasm, affecting the whole muscular system, producing opisthotonus or other distortions, and threatening death by asphyxia from toxic contraction of the muscles of respiration. This spasm comes like a flash, lasts a few seconds, and is gone. Then the patient returns to the former condition of muscular rigidity, more or less pronounced, lasting a variable time, gradually increasing in degree, and terminating in another spasm. Death, in two-thirds of the cases, occurs in a spasm so prolonged as to asphyxiate. It is to be noted that we have a period of remission and one of exacerbation or spasm, with a certain rhythmic rise and fall of nervous excitability. This condition, during the first or acute stage of the disease, is one of increasing violence. The spasms grow more severe, and the remissions are shorter or less pronounced until in about one or two weeks the disease culminates in a spasm of extreme violence that usually ends the case. But not always fatally, for this may be the critical discharge, from which, if the patient survives, he passes at once into the declining stage of the disease. Other causes of death may occur in the form of simple exhaustion, cardiac failure, or from accidental complications. It appears, then, that in the prolongation of the convulsive paroxysms lies the greatest danger to the patient. Eliminate these spasms from the disease and it would cease to yield such a frightful mortality. This is precisely the aim of our treatment, for the definite purpose in view is to prolong the remissions and modify or absolutely prevent the paroxysms. To accomplish this result we must fully appreciate the fact in therapeutics that when the functions of the nervous system are under the control of any agent that modifies them they are not easily affected by any other agent, or, as Dujardin-Beaumetz puts it, "when a nervous element is influenced or modified by a medicinal agent previously taken it cannot be easily impressed by any other medicament." This is a good rule, for it works both ways. We have, for instance, in tetanus, a toxæmia of which tetanine is the genetic agent. This poison produces a marked influence on the functions of the cord, increasing its reflex excitability. Now, if we attempt to counteract this effect by agents that depress the functional activity of the cord, such as eserine, chloral, the bromides, etc., we shall find that ordinary doses produce little or no effect. The nervous system is already under the control of a powerful modifier of function, and in this case "possession is nine points of the law." Therapeutic doses will be inert, toxic doses will be required to produce therapeutic effects. On the other hand, if we once obtain control of the nervous system and maintain that advantage by using our remedies in doses sufficient for the purpose, neither tetanine nor any other agent will easily regain control of the functions thus modified.

Such, in brief, is the outline of what I conceive to be the leading principles that should govern the treatment of the acute stage of traumatic tetanus. They account for the fact that recovery may occur under methods of treatment apparently diverse in character. Assuming that all remedies useful in the treatment of tetanus must possess the power of depressing the functional activity of the cord, the choice of remedies is not of more importance than the method of using them, and a poor remedy well used is better than the best of remedies inefficiently given.

The selection of agents calculated to fulfil the indications of treatment is a matter that can be determined only approximately by our present knowledge of their physiological action. The main object being to intoxicate the spinal cord so as to depress its normal excitability, it is evident that quite a wide range of drugs are at our service. Whiskey, the bromides, morphine, chloral, calabar bean, veratrum viride, gelseminum, belladonna, cannabis indica, nitrite of amyl, and many other remedies have been used, and used successfully in this disease, but it will be remarked at once that, however much they may differ in their general character and action, in the one essential property of depressing the functional activity of the cord they are all efficient, to a greater or less degree, if properly used. It is not my purpose to enter into a discussion of the relative merits of these drugs. I can only indicate my preference for calabar bean, chloral, and the bromides, with an occasional resort to chloroform, as furnishing all that is necessary for the treatment of the acute stage of the disease. They will serve at least to illustrate, in a

practical way, the main features of the treatment. Each of these remedies appears to have a special place and purpose in clinical use. We may divide the course of the disease naturally into two periods, the period of increase and the period of decline, with the climax or crisis between. Chloroform, calabar bean, and chloral have their most effective use in the first period of the disease and at its crisis. The bromides, and also the salicylates, come into use during the declining period. During the first period there are three indications to be fulfilled: 1st, to lessen muscular rigidity; 2d, to prevent convulsive spasms; 3d, to carry the patient through the culmination or crisis of the disease. To accomplish the first of these, and to maintain this advantage, is to accomplish all. The three remedies already mentioned are not equally adapted to the purpose in view. Chloroform, for instance, has only a limited use, but within its range of adaptation its action is unrivalled. There are two conditions in which its use may be necessary. The first is in those cases of rapid development, occurring soon after an injury, in which the violence of the paroxysms and their frequent recurrence threaten an early and fatal termination. One cause for the fatality of this most acute form of the disease lies in the difficulty of producing any therapeutic action in the presence of so profound a toxæmia. Again, chloroform may be necessary in cases of slower development, in which the disease, either from neglect or ineffectual treatment, has been permitted to get under full headway. Under these conditions chloroform is of immense service. Its action is sure and rapid. Carried to the degree of narcosis it gives us full control of the functions of the cord, abolishes reflex excitability, and holds the disease in check. This point attained, anæsthesia is to be continued long enough to transfer the control of the functions of the cord from chloroform to some other and safer agent. During anæsthesia, then, we may administer chloral, calabar bean, or any remedy suitable for hypodermic or rectal absorption, and, after allowing twenty minutes or half an hour for absorption to occur, suspend the chloroform. The patient gradually passes out from the control of the anæsthetic and into the control of either the remedy or the disease. If a proper dose has been given, the symptoms of the disease will reappear, but in a modified form, the muscles being less tense, and the pain relieved. It now remains to keep up this modified condition with appropriate remedies. Chloroform is no longer needed.

To lessen muscular tension and prevent the occurrence of spasm we may use either calabar bean or chloral, or both. Of the two, calabar-bean is the best remedy, because its action is confined to the same field in which the tetanus poison operates, and it is the nearest approach to a physiological antidote to tetanine that the Materia Medica offers. The variable character of the drug, as usually found, renders it very unreliable in practice, and hence it is better to use the salicylate of eserine than to depend upon the solid extract of calabar bean. Chloral is not so good a remedy, nor so perfect an antagonist of tetanine as calabar bean, but it is a better drug, and practically of great value in tetanus. If calabar bean is used, chloral will be needed to supplement its action as the disease approaches its climax. If chloral is used, the bromides will serve in the same relation. The question of dosage must start with the maximum quantity, and be determined as to its increase by the effect observed upon the muscles. Verneuil, in advocating the use of chloral, advises doses of at least 3 j. to adults, and not less than 3 iv. daily. He suggests immobilization in Bonnet's wire apparatus, and guards against a depression of the temperature by encasing the body in wadding. He considers it necessary to so regulate the dose as to keep the patient in a kind of continuous coma for at least fifteen days, and then to gradually reduce the amount of chloral daily. Meantime proper nourishment must be given and constipation avoided. This is probably the most effective method to follow when chloral alone is used. It depends upon imitating the natural process of sleep, during which the muscular tension in tetanus is always relieved. It covers more ground than the disease itself, for it modifies the cerebral as well as the spinal functions. It interferes somewhat with the process of nourishment, but not to so great a degree as morphine or atropine, and finally, its paralyzing effect upon the respiratory and cardiac centres render its effective use a matter of no small danger. Like all remedies that are of service in tetanus it has its advantages and its dangers, but there is no such thing as a perfectly safe method of treating the disease successfully, and chloral is not so dangerous as tetanus, nor more unsafe than other remedies adapted to its treatment. Twice I have succeeded in carrying cases of traumatic tetanus to recovery with much smaller doses of chloral than Verneuil advises, but I have never attempted to follow his method literally, believing that a semi-coma is not the best condition for the tetanic patient, and that smaller doses are equally effective if combined with or supported by the action of other remedies. It is to be remembered that during the first two weeks of the disease there is a gradual increase in its violence, and that the remedy must be correspondingly increased in amount in order to maintain its control. This will bring us about the end of the first week to consider the danger arising from toxic doses of chloral. In this dilemma, if without materially increasing the dose of chloral the bromides are superadded to the chloral, we shall increase the action of the remedy without adding to the danger of its use.

The use of calabar bean is a very different matter from the chloral treatment, for it requires far more care and attention to detail. The first requisite is a reliable and fresh preparation of the solid extract, or else the officinal salicylate of eserine, which is preferable to the more unstable sulphate. My own experience is confined to the use of the solid extract, and I now refer to the method of using that preparation. Beginning with a dose of not less than $\frac{1}{2}$ a grain of the solid extract, in adult cases, we must determine the repetition of this initial dose by observing its effects. I am quite aware that from $\frac{1}{15}$ to $\frac{1}{8}$ of a grain is the ordinary therapeutic dose, and that even $\frac{1}{8}$ of a grain may develop toxic symptoms. Some allowance must be made for possible idiosyncrasy in the patient, for the strength and freshness of the drug, and for the violence of the attack that is to be met, and smaller doses may be safer to begin with in average cases, but I speak from experience in advising much larger doses than are usually given.

Its action is evident in from ten to fifteen minutes, and is shown by a notable diminution of the rigidity of the cervical and masseter muscles. They feel less tense to the hand, the patient is able to move the parts with greater freedom, and the pain disappears as tension diminishes. The patient can now take food and swallow with comparative ease, and without the danger of producing a spasm.

Relaxation is not complete, the condition is merely one of diminished tension. After one or two hours the tension gradually increases again, the muscles become rigid, the pain of muscular cramp comes on, the risus sardonicus is more marked, the toxic contraction of the dorsal and cervical muscles begins to arch the head backward, and, unless something is done, a convulsive spasm will occur. The thing to do is to administer another dose of the remedy, and to so regulate the doses as to anticipate this condition and thus prevent the occurrence of spasms. I have already referred to the fact that there is a natural remission and exacerbation in the regular course of the disease, but under the use of calabar bean this periodicity becomes more marked because the remedy contributes to a more pronounced remission during its action. Two grains of the solid extract may be sufficient to obtain this relief for two hours at a time during the first week of the disease, but three or four grains will be necessary in acute cases before the end of the second week, and the increasing violence of the disease will bring these doses

closer together. As the crisis approaches, between the danger of the disease and the danger of the remedy the patient is practically "between the devil and the deep sea," for both the remedy and the disease are cumulative in their toxic action. At this stage of treatment we may possibly avoid both dangers by bringing chloral into use and rapidly diminishing the calabar-bean—a point in practice that is worth remembering. But it is not always possible to avoid the issue and hence a few words are necessary concerning the toxic symptoms of calabar-bean.

The first symptom to be noticed is a diarrhœa that is painless or nearly so and is readily controlled by morphine and, less perfectly, by atropine. This symptom is hardly to be classed as toxic for it is quite within the therapeutic range of the drug and is of no special significance. After the hourly administration of large doses without any apparent effect upon the pupils, with no perceptible increase of the lachrymal or salivary secretions, and without developing any toxic symptoms, all at once they appear in full force without a moment's warning and our patient suddenly exclaims that he cannot see and cannot breathe. We find him in a condition of extreme mental agitation, with a rapid, irregular pulse and tumultuous heart action, the pupils contracted to a mere dot, a deadly pallor on his face, and the whole body bathed in a profuse sweat. This, at least, is what happened in one of my cases after the administration of 500 grains during eleven days and 104 grains during the preceding twenty-four hours. In this emergency two remedies are needed as antidotes, atropine and morphine. The antagonism of atropine to calabar-bean depends on its stimulant action on the respiratory centres while morphine is equally efficient as a rapid cardiac stimulant. The dose of atropine should not exceed $\frac{1}{40}$ of a grain, repeated if necessary, for it is possible to increase the lethal effect of calabar bean by too large a dose of atropine. One-fortieth of a grain of atropine and $\frac{1}{4}$ of a grain of morphine was all that my patient received in the way of antidotes, and in less than an hour all the toxic symptoms had vanished, and he made a steady progress to full recovery on chloral, bromides and galvanism.

The disease has its culminating point and, during the period of its increase, no matter what remedy is given it must be increased in dose in proportion to the work it has to do. At last comes the crisis when we must choose between the danger of an excessive dose of our remedy and an excessive dose of tetanine. We choose the first because if toxic symptoms appear we may antidote them with the probability that the disease will have spent its force at this point. To pass this crisis successfully signifies recovery, yet the subsequent treatment often gets all the credit for "it is the last medicine that cures."

Whether we put the whole nervous system to sleep with chloral, or intoxicate the spinal cord alone with calabar-bean, it is good practice to supplement the leading remedy with some other agent as the disease approaches its culmination for the purpose of getting an increased effect without adding to the danger of the treatment.

To use our remedies timidly is to permit the disease to kill the patient. To use them recklessly is to perform that office ourselves. There can be no question, however, that the first of these errors has contributed most largely to the frightful mortality of the disease. It is to be remembered that the responsibilities assumed by the physician in the treatment of traumatic tetanus are precisely the same as those that belong to the surgeon who undertakes a dangerous and difficult capital operation.

In conclusion, I would merely say, in reference to the general management of cases of traumatic tetanus, that rest and nourishment are so important in their relation to the successful issue of treatment, that no matter how careful and thorough the therapeutic methods may be they will certainly fail unless the strength of the patient is properly supported and his nervous system protected against undue excitement. Quiet, rest, and proper nourhisment are absolutely essential for successful treatment.

THE POISON OF TYPHOID FEVER.[1]

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NOTHING is more discreditable to the civilization of the nineteenth century than the existence of typhoid fever.

Wherever men are congregated together in houses and villages, typhoid fever is endemic.

From Greenland to India, from England to China it holds sway. Yet of all diseases it is the most easily preventable, scarcely excepting small-pox.

Careful scientists have isolated its germ and taught us its characteristics. Numerous observers have shown us under what conditions the germ is best propagated, under what circumstances it perishes, and what agents best effect its destruction, yet their teachings seem utterly lost upon mankind, for people go on year after year drinking polluted water and spreading the disease. During the past year I have visited twenty towns supplied by water from dug or driven wells. In every instance the supply was polluted, and in the case of twelve was responsible for an outbreak of typhoid. The other eight were wanting only an initial case to infect the water-supply and cause an epidemic.

After investigation of many cases I have come to the conclusion that typhoid fever is rarely due to any other cause than polluted water, milk, ice, or meat. The first-named is, of course, the most common. I can readily imagine that other means of spreading the disease may occur, and in the course of this paper will instance other possible causes. I assume the following propositions as having been established by Chantemesse, Vidal, Brouardel, and other investigators with whose works you are familiar.

1st. That typhoid is due to a germ, the bacillus typhosus.

2d. This germ is contained in the sputa and stools of typhoid fever patients.

3d. The bacillus typhosus is easily destroyed by disinfection of infected stools and sputa by means of efficient agents, such as heat, mercuric bichloride, and carbolic acid.

No method of illustration is as convincing and striking as that of citing actual examples of the methods by which the disease is propagated. I will, therefore, give you records of a few authentic cases. Each case illustrates a different method of infection.

For the following instance, which shows how a perfectly pure water-supply, through ignorance, may become accidentally infected, I am indebted to Dr. John H. Girdner, of this city, who, a short time ago, had occasion to visit a small town in North Carolina, and while there was asked by a resident practitioner to see some cases of typhoid in the family of a farmer residing in a little settlement near by. The local medical man could not account for the outbreak, and had attributed it to a wave of the disease sweeping over the country. Dr. Girdner's curiosity was excited and he determined, if possible, to ferret out the causes. Of course his first step was to look after the water-supply. This he found was from one source for the entire hamlet—a clear spring, situated at the base of a cliff, perhaps ten feet high, and at such a distance from any source of drainage or privy contamination as to exclude both. Above the spring the cliff levelled off on a stubble field from which a crop of some cereal had been cut and the ground ploughed and harrowed. The direction of the harrow-furrows and the pitch of the surface was toward the spring; a couple of hundred feet to one side, but on a lower level than spring or field, stood the farm-house. Dr. Girdner ascertained that the first case of the disease occurred in this house, and on asking the country physician how the dejecta were disinfected, was told that they were thrown away at a distance from the

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house, and disinfection was left to the sun and fresh air. As they entered the farm-house they met an old woman carrying a vessel under her apron. The country doctor was about to stop her, but was restrained by a gesture from Dr. Girdner. She walked to the stubble-field, proceeded until she reached a point just above the location of the spring, then she gave the contents of the vessel a toss, and walked calmly back to the house. Here was the cause of the epidemic. The rain washed the poison down the harrow-furrows into the spring. Another water-supply was obtained, careful disinfection of the stools practised, and no other cases occurred.

A nearly parallel case was that of the Plymouth, Pa., epidemic. Nearly thirteen hundred persons developed typhoid from infection by the typhoid poison from one individual who resided on the bank of a small mountain stream supplying the town with water.

Typhoid fever is most frequently propagated by contaminated well-water. It is safe to say that scarcely a well exists in this country the water from which is safe to drink.

Wells are popular because they are convenient. Almost anywhere a well from ten to forty feet deep will furnish clear, nice-tasting water that will impress an uninitiated observer with its purity. The country well represents a type described in the Bible under the simile of a "whited sepulchre." It is sunk as conveniently near to the house as possible, often under the floor of the kitchen. It is the habit of the countryman to sink another hole, also as conveniently near as possible to the house—his privy. Now the well draws its supply from an inverted cone, the base of which is at the ground surface. The privy, on the other hand, contaminates a cone, the apex of which is near the surface and the base of which is on a level with the bottom of the well. This gives you an idea of how far-reaching privy contamination is as regards well-water.

So many examples of well-water causing typhoid present themselves that it is embarrassing to make a choice for the purpose of illustration. I will take one, however, that occurred in September last, at a New Jersey seaside-resort. A charitable institution, and a most worthy one it is, has a country house at this place. Six of its children came to this city, and shortly after their arrival developed typhoid. I investigated the water-supply of the country branch and found it to be from a well. A sample of the water analyzed by the Health Department chemist was shown to be contaminated by sewage. The location of the well and that of the privy showed the latter to be the source of the contamination. The privy had been the receptacle for typhoid germs from the bowels of a patient sick with the fever about three weeks before the children were affected.

Ice from infected water has been shown, in an able manner, by Dr. T. J. Mitchell Prudden, to be a source of danger. The typhoid germ is not destroyed by extreme cold. The germs that caused the Plymouth epidemic, already referred to, were exposed to a temperature of 22° below the Fahrenheit zero on the banks of the stream subsequently infected by them after a thaw occurred.

I am indebted to Dr. Fordyce Barker for the following account, illustrating the propagation of the disease by ice, though this epidemic, I regret to say, has not as yet been carefully investigated; its facts, consequently, cannot be vouched for by Dr. Barker; nevertheless it is probably essentially true. I only learned of it yesterday, but will take an early opportunity to personally investigate the conditions and data. Twenty-two cases of typhoid fever developed at a popular watering-place in this State during one of last summer's months. It was found that only those who used ice from a lake near by were affected. This ice was cut from a point near the entrance of a sewer that drained the town, or a portion of it. The use of this ice was stopped and the epidemic ceased.

Milk may be the carrier of typhoid germs, and may become infected in two ways.

First, through the water-supply, as the following instance, related to me by Dr. William M. Smith, will show: A country town in this State developed a large number of cases of typhoid fever (nearly two hundred), and investigation showed that only the customers of a certain milkman were affected. His well was examined and found to be contaminated by the drain of a neighbor's house in which a case of typhoid had recently occurred. The milkman admitted washing his cans with the well-water, but it is probable that he was no better than the others in his business, and occasionally utilized his pump for cow purposes. The infection of milk may possibly be accounted for in another way. It is this: The cow may take into her digestive tract the germs of typhoid; she may or she may not develop the disease (that cows are affected with a disorder that resembles typhoid fever is well known); but even if the germ produces no evil effect on the cow, it is a reasonable theory, and I advance it, that cultures of typhoid bacilli may be developed in the intestines of the animal who drinks water infected by them, and that her dung will be thus infected. Now milk always contains an appreciable quantity of cow-dung. I have seen the Lazell separator, a centrifugal machine for skimming milk, remove from one thousand quarts of milk as much dung as one could hold in both hands. This dung is detached from the udder, to which it adheres, by the operation of milking. I intend trying a series of experiments, with the object of demonstrating this theory, and hope to invoke the aid of Drs. Prudden and Biggs, the pathologists to the Health Department.

The point I desire to make in this paper is, that typhoid fever is essentially preventable, because its poison is always tangible and must be taken into the stomach and intestines in order to produce the disease; that, like cholera, it can never infect through the medium of the atmosphere, but must enter the stomach of man in food or drink, or on some infected article placed in his mouth. The strongest arguments advanced against this view have been those made by Volz, Herman Schmidt, Budd, Murchison, and Hutchinson. The latter writer states as follows: "Typhoid fever may be propagated in consequence of contamination of the atmosphere by typhoid poison. This may be the result of allowing the undisinfected stools or linen soiled by them to remain some time exposed to the air, or may arise from pollution of the soil from the same cause, or from defective drainage." He quotes Herman Schmidt, who cites several outbreaks in German garrisons which he believed to be due to soil-pollution where the ground underneath was found saturated with all kinds of impurities.

In one case the water-supply was found impure and cut off, yet the epidemic persisted. He does not state, however, what the water-supply was, or describe that which was substituted in lieu of the one cut off, nor does he in any one of the cases alleged to have been caused by contaminated air describe the water-supply, the ice-supply (if the latter existed), or that of milk. He merely gives the fact that gross defects were found in drainage, or that extremely filthy conditions existed. We acknowledge that atmospheric contamination by the typhoid poison is impossible when we admit, as we do, into our general hospitals cases of the disease, and treat such cases in wards filled with patients sick with other ailments. Here, if anywhere, the atmosphere would become infected were it possible to so infect it. Here, if anywhere, the disease would find suitable subjects to attack. On every side are persons debilitated and bedridden, who would easily develop the fever if the germ were once introduced into their systems. Do they? I have never known a case to be so caused, and I doubt if any of the experienced gentlemen here can instance such a case. Even if you can, it is such a rare occurrence that other causes must be assigned to it.

If atmospheric infection were possible, New York City would have been almost depopulated during the period be-

fore the Health Department was able to effect reform in methods of plumbing. Most houses in those days were charged with sewer emanations, which were poured into them through their defective and trapless pipes. The following table gives the number of deaths caused by the disease from 1866 to 1876, inclusive:

1866 514	1870 422	1874 275
1867 348	1871 239	1875 247
1868 329	1872 364	1876 283
1869 378	1873 294	

This does not show a very powerfully exciting or even predisposing cause. Assuming the average death-rate of typhoid to be twenty per cent., 239 deaths—the smallest number occurring in any one of the above years—would represent 1,195 cases, a sufficient number surely to infect the sewers.

The observers who defend the theory that the disease originates *de novo*, are negligent in respect to description of causes that must be excluded before their theory can be accepted as proven. In his *brochure* on the subject, Dr. Hutchinson, recognizing this fact, expressly states that the theory that the disease originates spontaneously cannot be accepted, because cases on which the theory is based can be accounted for by the proven fact that the germ may be latent for long periods, under certain conditions, awaiting favorable conditions to be fanned into activity.

Hutchinson cites the following instance, recorded by Von Gioth in proof of this:

"To a village free from typhoid an inhabitant returned suffering from the disease, which he had acquired at a distant place. His evacuations were buried in a dunghill. Some weeks later five persons who were employed in removing dung from this heap were attacked by typhoid fever; their alvine dejections were again buried deeply in the same heap, and nine months later one of two men who were employed in the complete removal of the dung was attacked and died." This instance might be taken as showing that the disease can be transmitted through the medium of the atmosphere, but when it is remembered how easy it is by means of infected hands to infect food, and that this was the probable manner of infection, we must doubt this to be a case of atmospheric infection. I believe that typhoid fever, like cholera, is frequently caused by infected hands. A walking case of typhoid fever is likely to leave its traces wherever it goes.

In the act of using paper after defecation the fingers are soiled. The most careful use of paper or cloth scarcely prevents such soiling. The sputa containing the germs, as has been shown by Ludwig Letzench. may also infect the fingers.

Door-knobs, banisters, etc., may receive a sufficient quantity of the poison to infect the hands of those who subsequently touch them, and the germs may thus be transferred to food or drink. Of course, in case of this method of infection, it would be nearly if not quite impossible to trace the mode of infection, though if we reject the theory of atmospheric infection we can account for such cases as the last described in no other way than that of digital infection. The scrupulous care exercised by the surgeon, who cleans and disinfects his hands and finger-nails before an operation, shows his appreciation of digital infection by disease germs.

It has been claimed by competent observers that meat of animals sick with typhoid fever at the time of slaughtering will produce the disease in persons eating it. The epidemic that occurred at Kloten, near Zurich, has been widely quoted in defence of this theory. In 1878 a festival was held at this place, and of the 690 persons who partook of the meat served at the banquet 290 were taken sick with typhoid fever. Three hundred and seventy-eight people who did not attend the feast, but who ate the meat elsewhere were also affected. Besides these, 49 persons who had not eaten the meat were taken ill subsequently, and their illness could be accounted for by infection from the first cases; in other words, they were secondary cases. All sources of infection other than that of meat could be, and were, carefully excluded. The place was free from typhoid, and it was clearly shown that the water did not cause the disease. All persons who ate no meat escaped, as did those who drank sufficient wine to cause them to vomit. All symptoms of typhoid were present, and post-mortem examinations of those who died showed all the lesions of typhoid fever. It was found that forty-two pounds of veal was furnished by a butcher who had taken it from a calf that was moribund from disease at the time of killing. All the meat of this animal was sent to the festival at Kloten, but the liver was sold to a man at the town of Seaboch, and the brain was sent to the family of a clergyman in the same town. The former got typhoid fever, and the entire family of the latter were attacked by the disease. It was also ascertained that another calf, in the hands of the butcher, was diseased, and the veal from this calf was in a decomposed state. All this meat was kept for some time in a refrigerator in the inn at Kloten, where the festival was held, and this refrigerator was found to be in a horribly filthy condition. Some curious facts were noted in this epidemic: The victims had more abdominal pain than is usual in typhoid fever, and the period of incubation was very short, some of the cases developing on the second day, and the majority between the fifth and ninth days. Dr. Hutchinson, to whose article I am indebted for the account I have just given, states that the short period of incubation is characteristic of all cases of typhoid fever caused by infected meat.

During this fall, with the assistance of Dr. Charles S. Benedict, I have investigated 146 cases in this city, between Twenty-third and Forty-second Streets, taken in succession from the records. Of these 72 were out of town during the thirty days preceding the attack, and 34 of the 72 had been in places known to be infected by typhoid. Seventy-five had not been out of New York, so far as could be learned. Of these 75, 17 were traced to recognized causes; 12 were due to the following method of infection, which was discovered by investigation; of these 6 cases of typhoid fever were reputed as occurring in a tenement-house in West Thirty-second Street.

The first case in the house occurred on August 15, and was in the person of an employee of the Department of Public Works, whose duty it was to clean and repair the public sewers. The other cases appeared in from twenty to sixty days after the first. The plumbing of the house was carefully examined, and no defects were found. I visited the premises with Dr. Benedict, and found that the school sink privy in the yard was flushed by means of a branch from the Croton supply-pipe, introduced in such a manner that its mouth was just under the surface of the contents of the sink when the latter was full. On account of the insufficient water-supply a force-pump was provided in the hall of each floor of the house above the first story. No fixtures were placed in the living rooms, the occupants of the different floors being compelled to obtain the water they used from the pumps in the halls. The supply to the school sink was provided with the usual valve to cut off the water, but this valve was always turned on so as to allow a stream of water to constantly flush the sink. When two pumps were being operated at once the suction induced was sufficient not alone to draw from the Croton main, but also to suck a portion of the privy contents into the water-pipes, thus contaminating the water. The amount drawn in was not enough to attract the attention of the tenants by the taste imparted to the water. The other 6 cases attributable to this cause were in a house in West Thirty-seventh Street, and the conditions found were the same as those I have just described. The first case, however, in this latter instance, contracted the disease in the country. No less than eight other houses, the water-supply of which

was thus contaminated, have been found by inspectors of the Health Department, but only in these two instances, so far as is known, has typhoid fever been caused by such conditions.

Four cases of typhoid fever, occurring in boys, during September, who had not been out of New York, investigated by Dr. A. H. Doty of the Health Department, were traced to the following cause: All were in the habit of bathing daily in the East River, near the mouth of a sewer on a line of which several cases of typhoid fever existed. In these cases no other cause could be assigned for the sickness except the one given, which I think is doubtless correct. The 57 remaining cases not accounted for were probably due to infected ice, milk, meat, or to digital infection. You will be interested to learn the relative prevalence of the disease in this city during the fall of 1887 and that of 1888. It is as follows: September, October, and November, 1887, 435 cases, 105 deaths; September, October, and November, 1888, 557 cases, 132 deaths.

The points I have sought to establish may be summed up as follows:

First. Typhoid fever never infects the atmosphere.

Second. Typhoid fever never arises *de novo*.

Third. The causes of the disease, in order of their frequency, are as follows: 1st, infected water; 2d, infected milk; 3d, infected ice; 4th, digital infection; 5th, infected meat.

In this and in other civilized countries laws are enacted for the purpose of protecting the community from the accidental and criminal use of poisons. Yet, while wise law-makers have recognized the necessity for restricting the distribution of those deadly but useful substances produced by man from the universal and mineral and vegetable kingdoms, they have not recognized the thousandfold greater necessity for restricting the distribution, by means of polluted well water, of the more deadly and useless poison which causes typhoid fever.

As I have already said, typhoid fever is pre-eminently a preventable disease. Its poison has been isolated; its characteristics are known. We know how and by what circumstances it is multiplied and propagated. It is well within the bounds of possibility for a person acquainted with these facts to use it for criminal purposes, and to almost defy detection; and yet against this insidious and deadly poison in the hands of the ignorant or careless we have no safeguards. On every side we are exposed to the danger of being infected by such people with the poisonous agent that has for its effects the train of symptoms called typhoid fever.

If in every case of typhoid fever the stools and bedding were effectually disinfected, and the person of the patient after convalescence was also disinfected, typhoid fever would soon cease to exist. Even if these measures are not observed, nevertheless the danger of taking the disease can be reduced to a minimum by such precautions as can readily be taken by any one who knows the characteristics of the poison and utilizes his knowledge to avoid its dangers, such as never drinking well or ice water, avoiding milk that has not been boiled, and by washing the hands before eating.

The death from typhoid fever of those whose negligence or disregard of the known laws of nature indicates stupidity or indifference is a striking illustration of the operation of the law of the survival of the fittest. It should be remembered, however, that this law applies in the economy of nature to the lower animals and not to man, since the distinctive difference between man and the lower animals is found in his ability to adjust his surroundings in conformity to his actual needs and requirements; whereas the animal is unable to do so. We may therefore assume that the human being who ignorantly subjects himself to conditions which menace his life is reduced to a plane with the lower animals since he neglects to provide such surroundings as are conducive to health and longevity. Let the principles of hygiene be carefully taught throughout the country; let ignorance be removed in this manner and typhoid fever will stop its work.

It has been alleged in the public press that the Health Department of this city is doing nothing to prevent the ravages of typhoid. This is not true. Every case of the disease reported is visited, and in tenement-houses instruction is given by competent men concerning disinfection. Disinfectant agents are also furnished. All possible local causes are looked for, and if any are found to exist they are removed. The result is that secondary cases seldom occur.

During the months of September, October, and November ten physicians employed in this work made 2,592 visits to houses containing contagious diseases. This cost the city about forty cents for each inspection. The time taken for many of these visits was not less than an hour, and some took a longer period.

But, gentlemen, I have said all I have to say at present on the subject, and I will close my remarks by reading a poem written years ago by a distinguished gentleman who is present here to-night, and who little dreams that what he perhaps calls a folly of his youth is to be brought back to him now.

THE OLD OAKEN BUCKET.

(As Revised and Edited by a "Sanitarian.")

With what anguish of mind I remember my childhood,
Recalled in the light of a knowledge since gained;
The malarious farm, the wet, fungus-grown wild-wood;
The chills then contracted that since have remained;
The scum-covered duck pond, the pig-sty close by it,
The ditch where the sour-smelling house drainage fell;
The damp, shaded dwelling, the foul barn-yard nigh it—
But worse than all else was that terrible well;
And the old oaken bucket, the mould-crusted bucket,
The moss-covered bucket that hung in the well.

Just think of it! *Moss* on the vessel that lifted
The water I drank in the days called to mind,
Ere I knew what professors and scientists gifted
In the water of wells by analysis find.
The rotting wood fibre, the oxide of iron,
The algæ, the frog of unusual size,
The water, impure as the verses of Byron,
Are things I remember with tears in my eyes.
And to tell the sad truth—though I shudder to think it—
I considered that water uncommonly clear,
And often at noon, when I went there to drink it,
I enjoyed it as much as I now enjoy beer.
How ardent I seized it with hands that were grimy,
And quick to the mud-covered bottom it fell;
Then reeking with nitrates and nitrites, and slimy
With matter organic, it rose from the well.

Oh! had I but realized, in time to avoid them,
The dangers that lurked in that pestilent draught,
I'd have tested for organic germs and destroyed them
With potassic permanganate ere I had quaffed;
Or, perchance, I'd have boiled it, and afterward strained it
Through filters of charcoal and gravel combined;
Or, after distilling, condensed and regained it,
In potable form, with its filth left behind.
How little I knew of the dread typhoid fever
Which lurked in the water I ventured to drink;
But since I've become a devoted believer
In the teachings of science I shudder to think.
And now, far removed from the scenes I'm describing,
The story for warning to others I tell,
As memory reverts to my youthful imbibing
And I gag at the thought of that horrible well;
And the old oaken bucket, the fungus-grown bucket—
In fact, the slop bucket—that hung in the well.

J. C. BAYLES.

THE CLINICAL TESTS OF CHLOROSIS as distinguished from anæmia are, according to Gräber (*Therapeut. Monatich.*, 1887, No. 10), increased alkalescence of blood, normal percentage of blood-cells with diminished hæmaglobin, normal relations of the leucocytes.

THE TRANSPLANTING OF A RABBIT'S CORNEA INTO THE HUMAN EYE.

By JULIAN J. CHISOLM, M.D.,

PROFESSOR OF EYE AND EAR DISEASES IN THE UNIVERSITY OF MARYLAND, AND SURGEON-IN-CHIEF TO THE PRESBYTERIAN EYE AND EAR CHARITY HOSPITAL OF BALTIMORE CITY.

Six months since I transplanted a disk from a healthy rabbit's cornea into the cornea of a patient who had lost sight from the effects of a lime burn. For three years his eyeballs and lids had been united in symblepharon. I had liberated the left eyeball, and on two occasions had dissected away the whole anterior layer of the fleshy cornea with the hope of meeting a transparent portion within. Granulation tissue would soon form again, and a grayish red cornea would finally always remain. He had good light perception but could not get beyond this low degree of vision. An active man, of twenty-nine years of age, he seemed doomed to permanent blindness for the remainder of his life. His constant appeals for further operations, and the desire to have me keep on cutting away the fleshy layers of granulation tissue as often as they formed, induced me to transplant a disk of clear rabbit's cornea into the centre of his opaque one.

By means of Dr. Von Hippel's ingenious instrument I succeeded in trephining the human cornea, through all of its layers, down to the membrane of Descemet. Seizing the edge of the circular-cut piece, I had the satisfaction of drawing it away entire, leaving a clear lining membrane to the anterior chamber of the eye. Through this clear peep-hole vision was at once restored. Into this well from which the trephine had taken the thick plug I inserted a disk of clear cornea cut out from a living rabbit's eye, by the same trephining instrument. The piece fitted perfectly into the hole made for it, as a bung does in the bung-hole of a barrel, its Descemet membrane lying upon the Descemet membrane of the human eye. The closed lid and a compress kept the graft in position. In a very few days the transplanted piece had become thoroughly adherent to the circular incision. From that time the rabbit's cornea has become identified with that of the man.

As to the successful transplantation of a graft there is now no longer a doubt. How the graft would behave in its new relations was the question of importance to the thousands of blind persons anxiously awaiting the final result of such experiments. To become united to the fleshy walls of the human cornea the transparent disk of rabbit's cornea had to become vascular, and necessarily opaque from infiltration. This was an essential part of the curative process, in order to establish union between the graft and its new bed, and to supply nourishment. Had it not occurred, the transferred piece must have sloughed, shrunken up, and fallen out.

It was very interesting to watch these vitalizing changes as they occurred in the graft. When the eye was exposed after five days of bandaging the infiltrated disk graft, so much whiter than the surrounding red fleshy cornea, made the new central plug quite conspicuous. Some days afterward blood-vessels could be traced creeping into the graft from the pannitic margins of the human cornea, and finally the patch became quite pervaded by newly formed blood-vessels. Fortunately it never became fleshy, although the individual vessels of fine calibre, looping over the circular margin at the line of adhesion, could be traced in their meanderings over the surface of the graft. They were directly connected with large feeding vessels in the ocular conjunctiva. In the course of treatment I divided these large trunks so as to cut off the excessive blood supply to the transplanted piece, and have thereby caused a visible shrinkage of the fine red lines in the graft.

After six months the new piece of transplanted cornea retains its distinguishing features, and its outlines can be readily detected. It is grayish in color, with red marginal tracings. No vessels run entirely across the disk. The back and black ground of pupil modifies decidedly the tinting of this central part of the cornea, and becomes more conspicuous monthly as the graft slowly clears up.

Now comes the question of all importance. What good has the patient secured by the experimental transplantation? Fortunately the benefits, even at this early stage of the experiment, are positive. The patient can see large objects ten feet away from him. This amount of sight, already secured, enables him to move about with confidence, when before the operation he dared not move a foot without the aid of a guiding hand. Alone and unattended he can walk for miles along the country roads in the neighborhood of his home. Quite recently he visited the hospital for inspection. Since the operation his whole facial expression is changed from one of permanent anxiety and doubt to one of confidence and cheerfulness. He can already move about with some freedom, avoiding obstacles in his way. He sees persons ten feet off but not yet to recognize them. This of itself is an immense improvement on no sight. Still I see much better things in store for him. From month to month I can mark his improvement in detecting objects which he did not see on a former visit.

This slow progress is perfectly in keeping with the pathology of the cornea. We are accustomed to observe the snail-like progress in cases of interstitial keratitis, and how months always, and even years are required to restore in such cases good sight to blind people. This piece of transplanted cornea is now undergoing the familiar and regular metamorphoses of interstitial keratitis. While the fleshy cicatrical tissue of the cornea can undergo no change for the better, and must ever remain opaque, there is every evidence that the transplanted piece, infiltrated as it still is, will in time give him the peep hole desired, and will restore useful vision to one otherwise doomed to permanent blindness.

The transplanting of a disk of rabbit's cornea for the purpose of rendering the central portion of an opaque human cornea useful is in this case already so much of a success as to warrant its repetition on any suitable case which may present itself. All cases of corneal blindness are not suitable cases for transplanting. Most of such diseased eyes are the sequel of perforating or sloughing ulcers of the cornea, with amalgamation of iris and cicatricial tissue, and with no aqueous chamber. The *sine qua non* of a proper case for operation is a perfect elastic membrane of Descemet, and a normal anterior chamber, filled with aqueous fluid. The lens and iris must also be intact, with a free pupil. For successful transplanting there must be a transparent membrane of Descemet as the foundation upon which to plant the graft. In preparing the eye by trephining this membrane must not be perforated. It must remain perfect so as to retain the aqueous secretion within its proper chamber, and make a barrier, to prevent the displacement of the newly-placed corneal disk by the oozing away of the eye humors.

In the anatomy of the cornea the various layers of which it is composed are much more closely adherent to each other than is the innermost layer of corneal tissue to the elastic membrane of Descemet. In deep ulcerations of the cornea this lining membrane of the anterior eye chamber will so draw upon its loose connections as to form a protruding hernia through the bottom of the ulcer. By the dexterous handling of Dr. Von Hippel's trephining instrument layer by layer of corneal tissue can be cut through without disturbing the lining membrane. By watching the depth and the regularity of the trephining section, as is necessary in opening the skull, the cupping or turning up of the edges of the portion, as freed, will indicate surely when all the layers are cut through. Seizing the loosened plug with a forceps it is much more easily removed as a whole by traction, than brought away piecemeal. Practice on the fresh eyes of slaughtered animals will make the manipulation perfect. The rabbit's cornea is not so thick as the human, but as the whole thickness of it is added to the human Descemet's

membrane, this addition with the slight pushing out of the membrane by the watery contents of the chamber, will bring the surface of the graft on a level with the anterior corneal surface, and insure the nice adaptation of the edges. The two serous layers when juxtaposed one on the top of the other adhere promptly and perfectly.

In suitable cases the transplanting of a disk of clear animal cornea into the centre of an opaque human cornea, is a legitimate surgical operation, promising to give useful vision to blind people. By useful vision I do not mean perfect sight. If sufficient vision is obtained to allow one to guide himself, and to move about in safety without the constant presence of a helper, it is well worthy of an effort to secure. Judging by my experience in watching the slow development of returning sight in my patient, I would say that the little but steady progress in seeing from week to week will, in the course of time, re-establish an amount of vision very enviable to those who have not it. Independence against compulsory dependence in any of the affairs of life is well worth striving for. Useful sight against no sight becomes a precious acquisition. In a certain class of blind persons the transplanting of clear corneal grafts seems to be the only way to attain this much-desired and longed-for blessing.

Progress of Medical Science.

Observations on the Situation of the Apex-beat in Children.—Dr. W. von Starck has made an elaborate investigation of the situation of the apex-beat in children. The following are his most important conclusions: 1. In the first year of life the situation of the apex-beat is frequently indeterminable. 2. It lies without the nipple line in most children up to the fourth year; during the following years less and less frequently in this situation; after the thirteenth year practically not at all. 3. It is found in the mammary line but seldom in the first year; more and more frequently so up to the seventh year; less often again after that age; but at fourteen may again be found there. 4. Within the mammary line the apex-beat is never found up to the second year; seldom up to the seventh year; from nine upward, in the majority of individuals; from thirteen upward, almost exclusively. 5. In the fourth interspace the apex-beat lies almost exclusively during the first year; thereafter less and less often in that situation. 6. The apex-beat is found in the fourth and fifth interspaces, but seldom during the first two years of life; from the third to the sixth year often; thereafter again less often. 7. In the fifth interspace the apex-beat is very seldom situated during the first two years; in the next years more often—from seven onward in the majority of subjects; after the age of thirteen almost without exception there. 8. The apex-beat is very seldom indeed to be found in the sixth intercostal space in children.—*The Practitioner.*

The Infant's Pulse.—Dr. Edwards, in the *Medical and Surgical Reporter*, says that the most marked characteristic of the infant's pulse is irregularity, which occurs whether the child is asleep or awake, at rest or in active movement. Conditions which will hardly perceptibly affect the pulse of the adult will derange the rhythm of the infant's pulse to a marked degree; disorders of digestion, so common in infancy, show marked effect upon the pulse rhythm. Irregularity is also seen during constipation or diarrhœa, and is associated with intestinal worms and with dentition. An important, and as yet unrecorded, difference between the infant's pulse and that of the adult is the fact that in the former there is an entire absence of dicrotism, and it does not appear until the child has reached the tenth to the fourteenth year; the infant's pulse has not the same recoil as the adult's; it has furthermore been demonstrated that blood-pressure in the young is very low, and that dicrotism in the adult pulse is produced by conditions that do not exist in the infant. It is also well known, since Marey demonstrated the fact, that the longer the vessel the greater the dicrotism. Infants present great variability in the size of their arteries; in some of the diatheses the blood-vessels are much altered; for example, rickets is attended by large arteries. On the other hand, the arterial system may be unduly small. The character of the pulse in infants is difficult to describe; it yields readily to the finger of the observer, is small, irregular, and does not present any marked difference between systole and diastole. One observer aptly remarks that the pulse of infants is deprived of sense, rules, or proportion. It is affected by most trivial departures from health. Even a slight accumulation of flatus, for instance, will so alter the pulse that, judging from it alone, one could not avoid concluding that the little patient was the subject of a grave disease. While irregularity in rhythm may be considered one of the normal features of the pulse, it is not so, however, with persistent frequency, which is always a manifestation of cardiac overstrain, no matter how young the child may be; it also occurs in association with anæmia, leukæmia, and malarial intoxication in babes. The frequent action may be constant or paroxysmal in its appearance. Occasionally in infants we meet with exactly the opposite condition, namely, infrequent pulse, which is usually congenital, although the author has several times observed an infrequent pulse associated with the jaundice that is common during the early months of life, and also with renal disorders. The congenital cases are liable to present also evidences of cerebral disturbance, great mental excitement, or epileptiform attacks.

An Alleged New Use for Ether during Anæsthesia.—Dr. H. A. Hare calls attention to the fact that very frequently, during the early stages of the administration of an anæsthetic, the patient forgets to breathe, even before the ability to perceive peripheral irritation is lost. Even later in anæsthesia, when the breathing suddenly ceases, we are accustomed to use cold water externally and to slap the patient with wet towels. Such measures are generally called for hurriedly, and it is not at all uncommon for an exasperating delay to occur before the water arrives. Ether is always at hand, however, and he has found that in a large number of instances, both in man and in the lower animals, the free use of ether poured upon the belly causes so great a shock by the cold produced by its evaporation, as to cause a very deep inspiration, which is often followed by the normal respiratory movements.—*University Medical Magazine.*

Irritable Bladder and Frequent Micturition in Females.—A paper on irritable bladder and frequent micturition in females has been published by Dr. Alexander Duke, ex-Assistant-Master, Rotunda Hospital. In cases where we are able to exclude the urine itself as a source of irritation, as well as uterine disorders, we are obliged to seek for some other cause. In a great number of these cases there will be found an unnatural appearance of the meatus urinarius, the opening being much smaller and rounder, reminding one somewhat of the pin-hole seen in conjunction with conical cervix uteri. This description of case is comparatively easily cured by forcible dilatation of the meatus or urethral canal. Dr. Duke has noticed a rather curious phenomenon to occur during the process, that is, the escape of a considerable quantity of urine when the blades of the dilator are freely opened (and this after the bladder had been but a few moments before fully emptied to all appearance by the catheter), the amount of urine escaping being fully equal in some cases to that previously removed. It has always been a puzzle to him where this urine came from, as the diagnosis of cystocele is a comparatively easy one, and a sacculated condition of the bladder could not possibly exist in all the cases in which he has noticed this peculiarity. Dilatation of the urethral canal is the most useful treatment in all cases when the urine is normal, and spasm and ir-

ritability is complained of. If there is a manifest want of tone in the bladder, a mixture containing tr. ferri muriati, cantharides, and nux vomica has always given satisfactory results. A blister over the sacrum proves valuable in exceptional cases. The galvanic battery is a *dernier ressort*, and gives most satisfactory results in some apparently hopeless cases, one lady patient having worn a urinal for more than five years, night and day, previous to its employment.—*The Medical Press.*

What can we do to Prevent or Diminish Shock.—This question is answered by Dr. Cheever as follows: 1. Wait for reaction. 2. Never neglect to calm those suffering mental shock by a cheerful word and personal presence. 3. Give alcohol, either spirits or wine, a quarter of an hour before the anæsthetic. 4. Make the anæsthesia short; never begin it until everything is ready; suspend it during the less painful dressings. Consciousness returns tardily. We keep up the anæsthetic longer than is necessary. 5. As rapid an operation as can prudently be done. 6. As short a dressing as practicable. 7. As a cardinal point, avoid chilling the patient. To promote reaction after the operation: 1. Persistent and carefully applied dry heat. (Be careful about accidental burns.) 2. Liquid nourishment, combined with a stimulant and a little laudanum by enema. 3. Subcutaneous injection of brandy. 4. Aromatic spirits of ammonia by the mouth. Champagne is sometimes retained when other things are rejected. 5. Black coffee and brandy, the stimulant *par excellence* when it can be retained in the stomach. 6. Quiet; a horizontal, or more than horizontal position; sleep; assurance that all is over and doing well. Modern surgery has won three great triumphs: It has substituted sleep for pain. It averts secondary hemorrhage by the animal ligature. It prevents fermentation by germicidal applications. Can we add a fourth, by stilling the nervous system and averting, or diminishing, secondary shock?—*Boston Meaical and Surgical Journal.*

Saccharine for Ammoniacal Urine.—Dr. James Little, in a paper upon the value of saccharine in preventing the decomposition of the urine in cases of chronic cystitis, states that although it exerts no very marked effect in tubercular cystitis, or in other varieties of the disease not accompanied by alkaline urine, it has been employed with very beneficial effect whenever a highly ammoniacal state of the renal excretion was present. Saccharine, in fact, appeared to act by neutralizing or diminishing the amount of free ammonia in the urine, whether this arose from stricture, paralysis, or prostatic disease. The ammonia being kept down or extinguished by the drug, the affection became manageable under the ordinary treatment.—*Journal of the American Medical Association.*

How Intestinal Tuberculosis is caused by Swallowing Sputa.—Dr. Hosler has published a paper on the infection of the intestinal mucous membrane from the swallowing of tuberculous sputa. In one case, which he treated in hospital, the patient, who was rather stupid, could not be persuaded into ejecting the sputum, but invariably swallowed it, in quantities which other symptoms showed to have been very great. Ten days after his first attack of cough with expectoration, diarrhœa and severe colic came on, which was relieved by opiates and other appropriate remedies, but which, nevertheless, kept on until death occurred in eight days. Distinct signs of tubercle were found in the lung, but in no other part of the body except abundantly in the intestines and the jejunum. Mosler attributes the presence of tubercle in the intestines in all cases more to the swallowing of the sputa than to a general infection. He has not as yet succeeded in producing tuberculosis of the intestines in animals by feeding them on tuberculous sputa and pieces of solid tubercle, but in one case it caused considerable inflammation of the stomach and small intestine. A tonic prophylactic treatment, in the direction of the bowels, is indicated, as tubercle chooses the weakest organ for its development.—*Pacific Record of Medicine and Surgery.*

A Simple Method for the Detection of Lead in Water.—The minutest quantities of lead in potable waters may be detected by a simple method. The apparatus needed is an ordinary tumbler and two perfectly bright and clean knitting-needles. Fill the glass nearly full of the water to be tested and add eight or ten drops of acetic acid, or, in its absence, a teaspoonful of vinegar. If the water be quite turbid, double or even treble this quantity may be used. The needles should be carefully revolved occasionally. If lead be present in the minutest quantity, in the course of a short time dark or black spots will appear upon the needles, and in the course of six or eight hours the entire surface in contact with the water will be covered with a gray coating, the depth of color of which will depend upon the amount of lead in the fluid. From time to time a needle should be withdrawn and examined with a magnifying-glass, if necessary, to determine whether or not a deposit is being formed. The same needle should be withdrawn each time, and one needle should be left in contact with the fluid three or four hours longer than the other. After removal they should be placed in a dust-free box and left for twenty-four hours, as in cases where the amount of lead is exceedingly small a deposit may be formed which cannot be immediately detected, but which after standing for twenty-four hours becomes very perceptible, the color being a yellow or reddish-rellow.—*National Druggist.*

Ergot in Incontinence of Urine in Children.—A writer in the *Medical Analectic* says that he has been using for many years the fluid extract of ergot in the treatment of incontinence of urine in infants and children, and almost regards it as a specific for the disease. He prefers to give it simply, and to treat separately any conditions of the patients that may require therapeutical aid to correct those states of physical debility which either predispose to incontinence of urine or aggravate its presence. He gives to an infant from one to three years old, five to ten drops; and to a patient from three to ten years, ten to twenty drops every three hours. Few children object to its taste, and it should be continued uninterruptedly for two or three weeks, and resumed if the disease should return, in which case the doses ought to be gradually increased.

Race and Insanity.—Dr. H. M. Bannister concludes from a study of this topic that: 1. In the white race the depressive types of mental disease are most frequent in the Germanic and Scandinavian peoples, and the least so in the Celts; the reverse of this appears to be the case as to the exalted or maniacal types. 2. General paralysis is not a disorder from which any race is immune, but one that depends upon causes independent of racial or national peculiarities. 3. The well-known fact that insanity is much more common among the foreign-born than among natives in this country, is not to any great extent explainable by the shipment of the defective classes of Europe to America. The "cranks" and epileptics, and other neurotic individuals do not appear to be represented, in due proportion, even among the foreigners in our asylums. The cause of the excess of the foreign-born insane in this country is, it seems probable, to be looked for mainly in the fact that, supposing the immigration to include only its proportion of persons below the average of mental strength and flexibility, the change of scene and associations, the difficulties of beginning life among them, disappointments, home-sickness, and all other accidents and trials that befall the new-comers, together contribute to break down mentally a vast number who under other circumstances would have escaped, and largely contribute to the mass of insanity in this country.—*American Journal of Insanity.*

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RAILWAY SPINE.

THE subject of the neurasthenic and the hysterical disorders following injuries has been touched upon by French observers, and a summary of their views, by M. Guinon, has been given to our readers under the title of the "Surgical Relations of Hysteria" (see MEDICAL RECORD, December 29, 1888, page 755). A number of monographs have also appeared from German writers bearing more especially upon the topics of railway injuries; one of these is by Strümpell ("Ueber die traumatischen Neurosen," *Berlin klin. Woch.*, 1888). Strümpell makes a distinction between cases in which the patient presents general symptoms not directly related apparently to the local injury and those in whom local phenomena, such as paralyses, contractures, etc., are found. The first form a class of "general traumatic neuroses;" the latter, of "local traumatic neuroses." Among the chief of the symptoms in the general neurosis are peculiar mental disturbances. The patient suffers from depression, and a tendency to hypochondriasis. There is feebleness of will and of memory, irritability, poor sleep, and often frightful dreams. In the gravest cases, according to Strümpell, the condition may end in actual dementia. Besides this, however, there are signs of a general neurasthenic state. There are anæsthesias, retraction of the visual field, disorders of taste and smell, hyperæsthesias at the seat of injury, tremors, and contractures. This is the same condition that French writers call hysteria, though Strümpell prefers not to adopt that name, but considers it a general neurosis peculiar to itself. Whatever name be given, the facts observed are nearly the same. This general traumatic neurosis, according to Strümpell, is incurable. He has seen improvement in many cases, but that is all.

Under the head of local traumatic neuroses Strümpell describes the various symptoms which to the French school are those of hysteria; viz., functional paralyses, anæsthesia, contractures, hyperæsthesia of the injured part, etc. The peculiar mental disturbance is not present. The local disorders, being all functional, are curable.

A recent work by M. Grasset ("Leçons sur l'Hystéro-traumatisme," Montpellier, 1889) takes up this same subject. For Professor Grasset the nervous sequelæ after injuries and shock form a special type of disorder which he calls traumatic hysteria. In this he agrees with Strümpell (except as to the name hysteria), and differs with his Paris colleagues, Charcot and his pupils. Hystero-traumatism, he says, is a general neurosis, affecting more especially cerebral functions, and belonging to the family of hysterias. It is developed by traumatism in predisposed subjects.

Dr. Oppenheim, of Berlin, read an article last year upon the traumatic neuroses before the Berlin Society for Internal Medicine, which he has subsequently published as a separate monograph ("Die traumatischen Neurosen," Berlin, 1887). The work represents a study of cases observed at the Charité Hospital nerve clinic during the past five years, and contains the record and analysis of thirty-three cases. We cannot attempt to give any complete account of the writer's views here. Dr. Tweedy, in the *Dublin Journal of Medical Science*, has made a long and quite complete summary, part of which we reproduce.

"Certain symptoms," says Oppenheim, "are common to all, or at least to the majority of cases of nervous disease consequent on spinal concussion without external injury. These symptoms are chiefly psychic, and belong to the affection, mental depression and irritability occupying the foreground. The mental depression is accompanied by anxiety of mind, the patient's thoughts being always occupied, even in his dreams, with the accident, but is distinguished from pure melancholia both by the abnormal irritability always present, even in persons previously remarkable for their phlegmatic indifference to internal excitations, and by its hypochondriacal character. Severe intellectual disturbance is rare, but the author has seen a considerable degree of dementia with weakness of memory, also cases of hallucination, and even of traumatic insanity, requiring seclusion. Giddiness and cramps, varying between 'petit mal' and true epilepsy, are not infrequent; but care must be exercised in diagnosticating such from purely hysterical attacks.

"In the domain of the special senses, a mixture of hyperæsthesia and anæsthesia, or rather their juxtaposition, is the most frequent characteristic—*e.g.*, hyperæsthetic zones are found in the anæsthetic cutaneous areas; acuteness of vision is lowered, while the eye is extremely sensitive to light; the auditive faculty is lessened on the whole, while certain sounds react abnormally."

An article by Dr. Jacob Wolff ("Ueber Railway Spine," *Deut. Medizinal Zeitung*, October 4, 1888) is rather a review of the subject than an original contribution, and it deals with the organic as well as functional disorders that follow concussion of the brain and spine.

Dr. P. C. Knapp, in an article on "The Nervous Affections following Injury" (*Journal of Nervous and Mental Diseases*, October, 1888, p. 621), goes fully over the various subjects of "railway spine," "railway brain," and spinal concussion. His views incline more toward those of the German writers. "The neurasthenic state," he says, "is often produced by injury, but true hysteria is rare."

There is, he thinks, a fairly typical symptom-complex with psychical disturbances, paræsthesia, anæsthesia, slow and feeble movements, exaggerated reflexes, etc., which is not uncommon, and is probably due to organic disease.

As a result of the various contributions to the subject of traumatic neuroses, one can see that at least some progress is being made in clearing up the confusion which has so widely prevailed regarding this matter. There is,

it seems beyond doubt, a true hysteria sometimes, though rarely in this country, developed after shock; there is oftener, probably, a general neurasthenic state of an irritable form. There is occasionally a peculiar symptom-complex which is almost, if not quite, characteristic of traumatism, which is very serious in character, and probably organic in origin. Finally, it is well known that degenerative changes in the spinal cord and brain can, and do sometimes, follow spinal injury. The French wisely insist that these symptoms can only develop in the predisposed; but their claim that it is all, or nearly all, hysteria, will not hold at all in countries outside of France.

AN OPENING FOR RICH MEN'S SONS.

America, a Chicago journal of excellent literary standing, contains a modest plea for rich men's sons, and in particular sets forth the circumstances extenuating the idleness and folly to which many give themselves up. They are driven to it, we are told, because our institutions close the avenues of employment open to wealthy young men in other countries. The civil service, diplomatic service, and political offices are in the hands and under control of pot-house politicians; the Army and Navy are on so small a footing as to offer opportunity to few, and little inducements to the ambitious.

Without discussing the truth or otherwise of the views set forth in *America*, we would call attention to the fact that the profession of medicine, of all pursuits, just now offers the best inducements and has the greatest need of young men who combine ample means with industry and ambition. The enormous increase in the details and technicalities of medical art, the immense widening of knowledge in every department of our science, makes the acquirement of a thorough, well-rounded medical education a long and expensive process. Our medical schools do not even pretend to do more than send out men equipped in a general way to meet the ordinary accidents, diseases, and natal incidents of life. But the man who aspires some day to be a consultant in the community in which he lives must be thoroughly grounded in pathology; he must know the ordinary technique of bacteriology, urinology, and general histology. He must be able to examine the eye, ear, throat, the nervous system, and all the special organs with a sufficient skill to recognize the presence of anything abnormal. He must learn all these things without flying off into hobbies, and losing his judgment or sense of proportion. He must, therefore, be a man who starts with a good education which has developed his faculties and enabled him to control and use them rationally. He must have studied under a number of teachers, and acquired clinical experience and technical skill in different fields of work.

There is a great need of men of this kind in the profession of medicine. There are few enough now, even in our great cities; and, despite the overcrowding, such workers will find a welcome and sure reward in our ranks. There is no need of specialists; we have too many such already. Specialism, indeed, takes up many men who start out equipped in the way we have indicated, because it has usually been easier and brought pecuniary rewards more quickly. But this is now ceasing to be the case. Specialism is overdone; its ranks overcrowded. The profession needs more of the best quality of scientifically educated general practitioners. There is rich reward for such; and it is a field to which we invite young men of means to devote their energy.

GOOD FORM AND ENGLISH MEDICAL MEN.

THE writer of a recent work on the social customs which guide and illuminate the lives of our English cousins takes up, with other things, the subject of the medical profession. His remarks thereupon are given in another column.

Our readers will learn with interest, perhaps, that the profession of medicine is not one sought by "gentlemen" in England. We had already at times suspected this, although it must be confessed that a number of English medical men who have visited this country have conducted themselves in such a way as to be taken for gentlemen by their American hosts. We are glad, therefore, to find it admitted later that, occasionally and exceptionally, through some freak of fancy or exuberance of scientific bias, "gentlemen" do take up medical studies.

The Philadelphia advocate of an olive-colored button for doctors will be pleased to know that in England this is not necessary, as there is already a "professional garb," consisting of a high hat, light or dark, and a dark coat. This characteristic garb, with the high hat, is to be seen in intense exfoliating luxuriance, in this city on St. Patrick's Day. The high white hat is also, to some extent, an American vice; it is *de rigueur* in the Bowery and at political conventions during the heated spell.

It is not "good form" in England to call a physician "doctor;" it must be "Doctor Jones," or "Doctor Smith." Our informant unfortunately does not say whether it would not be proper to use the favorite American monosyllable, "doc"; or whether such a conjunction as "Doc" Gull or "Doc" Jenner would be in harmony with the best social usages of fashionable London.

The American doctor has some disadvantages to contend against; but it is a great thing that he is an American—a real American—without any hyphen in front, to whom such stuff as is written about the English doctor is meaningless or amusing.

THE NATURE AND TREATMENT OF RICKETS.

AN important and interesting discussion on rickets took place at the meeting of the British Medical Association in August last, a full report of which we find in the *British Medical Journal* of November 24, 1888. The discussion was opened by Dr. W. B. Cheadle, who dwelt more particularly on the etiology and pathology of the disease, and formulated the following general conclusions:

1. It is primarily a diet disease, which can be caused at will by rachitic diet just as certainly as scurvy by a scorbutic diet, and which can be cured as certainly by anti-rachitic diet as scurvy by an anti-scorbutic diet.

2. That the chief defect in diet which causes rickets is want of animal fat.

3. With this, probably, also deficiency of the earthy salts in form of phosphates.

4. A deficiency of animal proteid in conjunction with the preceding intensifies the condition.

5. The rickety state is accentuated by evil external

hygienic conditions, such as foul air and want of light, although these are not essential to its production.

6. Rickets is modified in character by the concurrent existence of congenital syphilis and of scurvy.

In addition to ordinary rickets there are certain aberrant forms, the pathology of which is still doubtful. Most cases of so-called fœtal rickets appear not to be true rickets, but a condition allied to cretinism. Yet there is, *prima facie*, nothing improbable in the commencement of the rachitic state *in utero*. It is possible that, in certain conditions, the mother may be unable to supply the fœtus with the necessary elements. A condition apparently analogous to mollities ossium in adults has been recorded in a child of eight months by Dr. Bury; and Rehn, of Frankfort, has observed a case in which the morbid changes corresponded partly to those of mollities ossium and partly to those of rickets.

Of the so-called "late rickets" or "adolescent rachitis," a condition the existence of which has been denied by some authorities, Dr. Cheadle said he had seen several examples. In one case the disease began in a boy nine years of age, presenting all the symptoms of ordinary rachitis during life, and the osseous changes found post-mortem resembled those met with in the infantile disease.

The treatment, prophylactic and curative, the speaker maintained, was primarily and chiefly dietetic. It was possible, he thought, to absolutely prevent the disease, the only essential condition being that the infant should be placed upon a diet containing in digestible form an ample amount of animal fat with sufficient proteid salts and carbohydrates; in other words, all the elements in the same proportions that obtain in human milk. Drugs were of minor importance, though iron and lime-salts might render good service. Warm clothing, fresh air, and plenty of sunlight were very useful, but nothing would be of much avail without proper food.

Dr. Carmichael was also of the opinion that a proper dietary was an essential factor in the prevention and treatment of rickets, and the fault which he found with most artificial foods was that they were deficient in the fatty element. But he was not disposed to deny the utility of drugs. Cod-liver oil was of great service, but it was often given in too large doses. He had been pleased with the results of inunctions of cod-liver oil, and had used the drug largely in this way.

Dr. Jacobi spoke very highly of phosphorus in the treatment of the disease, having seen very favorable results following its administration. He usually gave from $\frac{1}{150}$ to $\frac{1}{100}$ of a grain two or three times a day.

Dr. Ashby thought there must be some other factor than diet concerned in the production of rickets, for it was not uncommon to find in the same family some children who were healthy and others who were rachitic, all having had essentially the same kind of food. He might have added, indeed, that in some cases the rachitic children had had a more generous dietary than the healthy ones. For it is the younger ones, if any, that are affected, and at the time of their birth the family is often in better circumstances. It is not uncommon to see a young couple who have started in life poor but have prospered as time went on. The first children were brought up in poverty and their food was of the coarsest, but they were vigorous and healthy; when the later children were born the father was well-to-do, and was able to give them food of the most nutritious sort, yet they were evidently rickety. This is seen more especially in large families, and is apparently owing to the fact that the mother has become weakened by long child-bearing, and in consequence the younger children are born weakly and with poor digestive powers. The disease would thus seem to be one due to faulty nutrition, whether in consequence of poor food or of inability to digest and assimilate any food.

Mr. R. W. Parker regarded rickets as an inherited constitutional condition predisposing to disease of systems, manifesting itself in infants as a tendency to catarrh of the pulmonary and intestinal tracts, and of the ventricles of the brain; in young children, as a tendency to disease at the epiphyseal junctions; in older children, in curvature of the long bones; in young adolescents, as a relaxed condition of ligaments, which favored the onset of genu valgum, flat foot, curvatures of the spine, etc. In this sense rickets was a condition which might last from birth up to the seventeenth year of life. It was a condition which nothing explained so well as inherited idiosyncrasy. Diet, he thought, had little or nothing to do with the causation of the disease, although deficient and improper diet might aggravate the condition. As regarded treament, he thought that plenty of fresh air, bathing the body in sea-salt water, with subsequent rubbing and massage, and the use of fresh food as opposed to the prepared foods, would effect a cure, and that drugs might be abandoned.

A DICTIONARY-SUPERSTITION.

A CURIOUS illustration of the propagation of an error through the dictionaries is found in the words "sthenia, asthenia, neurasthenia," etc. According to Dunglison, Webster, Campbell, and, we believe, other authorities, the pronunciation should be on the penult, *e.g.*, neurasthenía, asthenía, myelasthenía, etc. Such pronunciation is quite out of accord with common practice, for the reason that there are scarcely any other words ending in "ia" which are not accented on the antepenult. Diphthería, neuralgía, dynamía, would sound to everyone like new diseases. There is, in fact, no etymological justification for the dictionary-accents given by the authorities quoted. *Sthenia* comes from σθένοσ, just as *algia* comes from αλγοσ. The word σθενεια, from which asthenia and neurasthenia are asserted to be taken, means "a boxing-match," and has no relevance to the words asserted to be derived from it. If, therefore, the physician will simply not give the "e" a long sound he can go on in his old way of antepenultimizing the sthénias, with the consciousness that sometimes man is greater than a lexicon.

DEATH BY DECAPITATION is still recommended by the French medical jurists. In an elaborate work, entitled "La Mort par la Décapitation," by Dr. Paul Loye, the following are given as its advantages: It kills instantly, painlessly, and surely—*tuto, cito, et jucunde*. There can be absolutely no return of consciousness after the blow falls. The separation of the head and trunk offers a public proof of death. In all other procedures, says Dr. Loye, and in death by electricity in particular, the simulation of death is possible.

News of the Week.

THE QUALITY OF ANÆSTHETICS IN NEW YORK.—The chemist of the New York State Board of Health reports that in 1887 there were 326 samples of officinal drugs examined and tested as to purity. The results are not very striking, except as regards chloroform and ether. It was found that safflower is very often substituted for saffron, and that washed sulphur is often impure. Of 53 samples of chloroform, 39 were of good quality, 10 fair, 4 inferior. Of 53 samples of stronger ether, there were 20 of good quality, 5 fair, 26 inferior. Over half the ether dispensed was of bad quality.

RAILWAY TRANSPORTATION AND INFECTIOUS DISEASES.—The National Association of Railroad Baggage Agents have recently met to prepare rules and regulations regarding the transportation of corpses. They have sent to all State boards of health copies of a system of rules prepared by a special committee, with a request that the boards suggest such changes as they see fit. The Iowa board recommended that scarlet fever, typhoid fever, and puerperal fever be added to the list of diseases which render corpses non-transportable; that uniform regulations be adopted regarding disinterment; and that undertakers be compelled to undergo an examination as to their qualifications, and receive a certificate entitling them to engage in business.—*Boston Med. and Surg. Journal.*

DES MOINES, IA., has a crematory for the city refuse which cost only $1,700. As an indication of its effectiveness there was at one time recently burned in it, in one hour, two dead horses, seven dogs, eighteen barrels of garbage, three hods of manure, fifteen bushels of rotten eggs, and three barrels of rotten fish, and no offensive smell was emitted.

THE MEDICAL EXAMINERS of the Boston Life Underwriters held their December meeting at Young's Hotel, December 11th, President G. N. Carpenter in the chair.

THE BENEFITS OF CELIBACY TO ANTISEPTICS.—Antiseptics are, as a rule, better adapted to single than double harness. Corrosive sublimate, for example, butchers bacteria in splendid shape while a bachelor, but sulks when united to most of the other germicides, especially iodine and soap. Carbolic acid has the same antipathy to iodine, but works well with soap, and the two latter make a team when yoked together. Permanganate of potassium is perhaps the most sensitive of all, and resents association with any other antiseptic on the list, but its especial antipathies seem to be carbolic acid, salicylic acid, glycerine, oil, soap, or any organic substance. About all of the combinations that produce results positively innocuous to the most innocent germ on the road are given above. Some of the others are strengthened by union, but, unless the marriage is performed or prescribed by an expert, celibacy is safest.—*Sanitary News.*

CHICAGO is attacking the abortioners, who, it seems, have been doing a flourishing business in that great town.

MUSIC AS A MEDICINE.—While there is not much music in medicine, there is a good deal of medicine in music. The effects of David's music on King Saul are well known. Dr. B. Rush on the "Mind" (Phila., 1825, fifth ed.) says: "Music in hypochondriasis has often afforded great relief." Luther has left the following testimony in its favor: "Next to theology, I give the highest place to music, for thereby anger is forgotten, the devil also; melancholy and many tribulations and evil thoughts are driven away." Dr. Rush says: "I attended a patient who told me that one of his paroxysms was cured by hearing "Old Hundred" sung in a country church. Dr. Cox mentions a striking instance of the power of music over a madman. In this grade the tunes should be plaintive and sedative. Says Dr. Rush (*loc. cit.*): "Certain tones of music have sometimes suddenly relieved a paroxysm of venereal desires."—*Albany Medical Annals.*

ADULTERATION IN THE MANUFACTURE OF IODOFORM GAUZE.—Not long since the attention of the writer was called to a can of iodoform gauze which bore the label of one of the most prominent manufacturers of so-called surgical antiseptic appliances, and upon which it was stated that the contained gauze was treated with thirty-three per cent. of iodoform. He was informed that a careful analysis of the gauze had revealed the fact that it contained but just sufficient of the drug to impart its characteristic odor, and that its beautiful rich iodoform color was due to the fact that it had been treated with a yellow aniline dye. Here was an instance of the grossest mendacity, the risks of which are to be added to the ordinary chances of inefficiency and carelessness in the hands of those to whom are intrusted the preparation of antiseptic materials.—DR. GEORGE R. FOWLER in *Annals of Surgery.*

REVOKING LICENSE TO PRACTISE.—Dr. H. G. Wildman, of the firm Wildman & McCoy, of Chicago, whose license to practise medicine had been revoked by the Illinois State Board of Health on account of alleged unprofessional practices, took an appeal to the Governor of the State, who has now reversed the decision of the State Board.

THE FREQUENCY OF PARASITES IN THE INTESTINAL CANAL is very great in some European countries. At Kiel Heller found some form of parasite in 47.3 per cent. of men, and 49.4 per cent. of women. At Munich, Frierich has found 12.90 per cent. in men, 24.44 per cent. in women. Of these, 6.54 per cent. were lumbricoid worms, 2.80 per cent. oxyuris, and 9.34 tricocephalus dispar.

THE ARRAIGNMENT OF CATGUT.—In the surgical clinic at Berne a series of cases of interrupted healing of wounds occurred, which pursued so typical a course as to suggest to Kocher the existence of a common origin of infection. A total and thorough revision of all antiseptic apparatus and dressings failed to correct the trouble, and thus the question was narrowed down to the catgut used in the clinic. Acting upon this, the catgut was finally excluded from consideration by its complete abandonment, when the usual aseptic course of cases operated upon at the clinic was at once restored. At first, a comparison of cases treated by silk for purposes of both ligature and suture, with those in which catgut was used, demonstrated in a most convincing manner the greater safety of the former as compared with the latter in furnishing immunity from wound-infection, other conditions remaining precisely the same.—DR. GEORGE R. FOWLER in *Annals of Surgery.*

"GOOD FORM" AND THE ENGLISH DOCTOR.—In a work entitled "Good Form in England" we find the following: "The profession of medicine is not one sought by 'gentlemen.' It has been hinted that it requires too much brains and ability. But whether that be the reason or not, it is unquestioned that the 'doctor' in England does not socially hold the position he does on the Continent or in America. . . . No doctor has ever been raised to the peerage. Successful medical men are knighted or made baronets. Brook Street, in London, is the street where fashionable doctors live. Physicians do not have 'offices' in England as they do in America. It would be 'bad form' to speak of going to a doctor's 'office'—his *house* is the proper expression. . . . Physicians and surgeons always wear high hats—black in winter, drab or white in summer—and always a dark frock or morning coat. This is the regulation professional garb. To call a surgeon a 'doctor' would be very 'bad form.' No medical man should be spoken to as 'doctor' without his name also being mentioned, as 'Yes, *doctor*,' 'No, *doctor*,' but 'Yes, Dr. Jones,' 'No, Dr. Smith.' Dentists have no social standing at all in England, and are never by any chance called *doctor*. They are all *misters*. Oculists are not very much better socially."

THE NUISANCE OF ROYAL SURGEONS.—The Duke Charles Theodore, brother of the Empress of Austria, is both oculist and surgeon, and is very skilful; but his fondness for the knife (says London *Truth*) is not appreciated at the Vienna and Munich hospitals, for whenever he operates all the regular arrangements are upset, the whole staff is required to be in attendance on him; he must always be respectfully addressed as "Your Royal Highness," and strict etiquette is observed, all of which is decidedly a nuisance. When the duke is at Vienna, he often passes the whole day in the general hospital, and if there are any arms or legs to be cut off, he hastens joyfully to the work. Duke Charles' zeal may possibly be moderated by his accession to the Bavarian estates of his father, Duke Max, who died the other day. He is married to a cousin of the King of Portugal.

THE INCREASE OF INSANITY IN NEW YORK STATE.—The statistics of the New York State Board of Charities for the year ending October 1, 1888, show only a little increase in the number of the dependent classes other than the insane, and in the expenditures during the year as compared with last year. The whole number of insane in the institutions of the State on October 1, 1888, was 14,772 as against 14,062 on October 1, 1887, an increase of 710, the greatest increase in any year in the history of the State. All of the asylums are full, and many are greatly overcrowded.

CERTAIN ILLINOIS JOURNALS want to abolish the State Board of Health, which, they say, has lapsed into a mutual protective society for the profession of Illinois. To this the *Journal of the American Medical Association* says: "That the tax-payers of Illinois are fully reimbursed for all the expenses of the State Board of Health by what the Board saves to the State in its sanitary work; that in one instance, the small-pox epidemic of 1880–82, the Board caused a saving, outside of Chicago, of 1,517 cases, 320 lives, and more than $2,790,000 (exclusive of actual life-value). Dr. Farr estimated each life as worth $795 to the State; so that the saving in life-value was $254,400; and we thus have a total of $3,044,400 saved by sanitary work at one time, not to speak of what has been done since 1882. In regard to the regulation of medical practice careful estimates show that since the Board has practically cleared the State of itinerants, quacks, and charlatans, two years ago, $450,000 have been saved to the people of the State."

VACCINATION AGAINST CHOLERA.—The practical objection against any form of preventive inoculation against cholera, such as Gameleïa now proposes, is that one attack of the disease rather favors than prevents another.

THE EIGHTY-THIRD ANNUAL MEETING OF THE NEW YORK STATE MEDICAL SOCIETY will be held in the city of Albany, on Tuesday, Wednesday, and Thursday, February 5, 6, and 7, 1889. The following papers have been promised: "The Etiology of Croupous Pneumonia," by Edward M. Sternberg; "A Clinical Study on Alopecia Areata and its Treatment," by L. Duncan Bulkley; "Chronic Headache," by C. L. Dana; "Vertigo—its Causation and Therapeutics," by J. Leonard Corning; "The Medical Treatment of the Diseases of the Urinary Organs in Children," by A. Jacobi; "The Treatment of Typhoid Fever," by S. S. Burt; "Management of Cardiac Dilatation based on its Etiology," by A. L. Loomis; "The Municipal Control of Diphtheria," by Charles Storer; "The Prevention of Summer Diarrhœa among Infants viewed in the Light of the Lesions," by L. Emmett Holt; "Some Sanitary Suggestions," L. E. Felton; "Diagnostic Value of Spinal Rotation," by Bernard Barton; "The Uses of Galvanism in Gynecology," by W. E. Ford; "The Management of Hip-joint Disease," by A. M. Phelps; "Treatment of Hypertrophies at the Base of the Tongue," by W. C. Phillips; "Recent Advance in the Treatment of Hernia," by W. B. De Garmo; "A Plea for the Employment of Koeller's Method," by C. O. Powers; "The Orthopedic Treatment of Tubercular Disease of the Knee in Children," by V. P. Gibney; "A Contribution to the Surgery of Cerebral Tumors," by L. S. Pilcher; "Contribution to Surgery of the Spine," by Robert Abbe; "The Disorders of Menstruation," by Andrew F. Carrier; "The Treatment of Acute Inflammation of the Middle Ear," by Gorham Bacon; "Operative Treatment of an Hyperostosis of External Auditory Canal," by Thomas R. Pooley; "The Use of Prismatic Spectacles for the Relief of Asthenopia caused by Insufficiency of the Ocular Muscles, with Reports of Cases," by D. Webster; "Considerations concerning the Operation for Hard Cataract," by Henry D. Noyes; "Membranous Rhinitis," by Frank H. Potter; "The Spectroscopic Examination of the Blood and Certain Diseases of the Eye," by Lucius Howe; "Purulent Conjunctivitis in Infants and Blindness in New York State," by Lucius Howe. *Titles Unannounced.*—W. S. Ely, George H. Fox, E. Gruening, Edward H. Parker, James R. Hunter. The names of those who have promised to take part in the discussions will be published later. It will greatly facilitate the labors of the Business Committee if members or delegates desiring to read papers will immediately forward their names, with the titles of their articles, to Dr. D. B. St. John Roosa, 20 East Thirtieth Street, New York, Chairman of the Business Committee.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, November 16, 1888.

FRANCIS P. KINNICUTT, M.D., PRESIDENT, IN THE CHAIR.

DR. CHARLES L. DANA presented a case of

PERIODICAL PARAPLEGIA,

with the following history: M. H——, nine years of age, born in the United States; family healthy. Has been well except for ordinary diseases of childhood. Has had no infectious fevers lately, nor any evidence of malaria, though she lives where it might develop. She is a bright, active girl of nervous temperament, but has never had any nervous or hysterical disorder, or signs of sexual irritation. Present illness began in January, 1888. Since that time she has had six well-marked attacks of paraplegia, lasting from two or three days to two or three weeks. They have occurred approximately on January 1, 1888, lasting two weeks; in March, lasting one week; June, September, October, and on October 23d, lasting two weeks.

The first attack came on in the daytime, three days after a slight fall, by which she bruised her knee. There were no premonitory symptoms. She simply found she could not get out of a chair. There was no pain nor were there any bladder symptoms. Under electrical treatment she recovered perfectly in a fortnight.

The subsequent attacks occurred in much the same way without premonitory symptoms, mental excitement, or any known exciting cause. The child, while playing, would suddenly become paralyzed. The attacks were accompanied with some increased discharge of urine, but with no disturbance of the bowels.

Present attack came on October 23d. The child complained of pain in the feet in the morning, and at about noon could not walk.

When seen by the speaker, six days later, she was paraplegic, could neither walk nor stand, but could move her limbs and flex or extend her feet feebly. She complained of some weakness in the arms. Her feet were extended in equino-varus position, the limbs were somewhat tense and rigid, the knee-jerks much exaggerated, but there was no ankle-clonus. No anæsthesia or tenderness on pressure.

The mother said that the legs had got smaller than they used to be; electrical examination showed some increase of sensibility to galvanic current, but no loss of irritability or changed polar reactions. The patient complained of some pain in the small of the back and abdomen. The mother said that this was the severest attack the child had had. She said the child had no leucorrhœa or sexual irritation, nor any bladder or bowel trouble.

Three days later the patient was far better, and could stand, but still could not walk, and was carried into the clinic. By suggestions and persuasion she was in the course of half an hour got to walk, and did walk out of the clinic with a little help.

Soltmann speaks of temporary intermittent paralysis occurring as the result of sexual irritation, or in hysteria. Kennedy has described temporary spinal paralysis, probably neuritic, however. A number of cases of periodic spinal paralysis have been reported. About one-half were attributed to intermittent fever, the remainder were of idiopathic character. The following are the cases: Fernel, "Universa Medicina," lib. iv; Cavarré, *Gaz. des Hôpit.*, 1853; Romberg, "Lehrbuch der Nervenheilkunde," 2. Aufl., 752, 753, Hartwig, Halle, 1874; Gibney, *American Journal of Neurology*, 1882, p. 332; Westphal, *Berl. Klin. Wochenschr.*, 1885, Nos. 31 and 32; Fischl, *Prag. Med. Wochenschr.*, 1885, No. 42; Cousat, *Rev. de Méd.*, 1882; Schachkowitsch, *Vratch*, 1882; Greiderberg, *Vratch*, 1887, xxviii. 11; *Centralblat f. Nervenheilk.*, 1888, p. 602; Suckling, *Brain*, January, 1888; Sacchi, *Revista Veneta di Scienze Med.*, 1888. The case was one of periodical hysterical paraplegia. The paraplegic character, absence of sensory or hysterical symptoms, and the periodicity led the speaker to think that such cases were not purely hysterical, however, but that there was a toxic or reflex influence acting as exciting cause of the attacks. Purely hysterical paralyses were usually monoplegic or hemiplegic, with sensory complications.

DR. V. P. GIBNEY referred to a case which he had seen in a child, who had had three or four attacks of paralysis attended by febrile disturbance, which the attending physician regarded as of malarial origin. The patient made a complete recovery, except that there was a condition of hammer-toe remaining. The speaker had searched the medical literature of the Southern States, in which malaria was prevalent, with a view to study the nervous manifestations of this infection, but had not found that brain and spinal-cord lesions were especially prevalent in these regions. He thought it not improbable, however, that the action of the malarial poison in a neurotic subject might declare itself in this manner. In New York City malaria usually assumes a masked form, and he thought it was too much the fashion among physicians to ridicule the term and to call it merely a cloak for ignorance, for he believed that the disease was much more prevalent in this masked form than is generally supposed. He recalled several cases of muscular contractures, which were possibly of reflex origin, but which seemed to be the result of exposure to malarial influences. One case occurred in a colored girl living in Long Island. She had an extreme wry-neck, but recovered completely under the administration of quinine.

DR. G. L. PEABODY related a case of paralysis of both lower extremities occurring in a full-grown woman who had lived in a malarious district. She recovered completely in a few days after being put upon quinine.

DR. CLEVELAND related a case of partial paralysis of the lower limbs in a young girl. The patient could not go upstairs, but could go down. He looked upon the case as a hysterical one, but the parents had the most implicit faith in the child, and would not for an instant have credited such a diagnosis. The treatment consisted in the application of the faradic current, and under this the patient gradually improved, and finally ceased coming. The speaker believed that the reason she got better was because it was too much trouble to make such frequent visits to his office. If it was not a case of hysterical paralysis he was unable to say what it was.

DR. BEVERLEY ROBINSON then opened a discussion (see p. 1) on

THE DIETETIC MANAGEMENT OF BRIGHT'S DISEASE.

DR. A. H. SMITH said that there were two points in relation to the treatment of Bright's disease concerning which he had thought a good deal. The first one was that of the so-called

PHYSIOLOGICAL REST OF THE KIDNEY.

Elimination by the kidneys takes place in two ways; there is, first, a mere transudation of the fluid, and secondly a bursting of the cells, thus allowing the fluid to pass away. Now the question is, do the kidneys do any more work when a larger amount of excrementitious material presents itself for elimination? The speaker doubted very much whether they did. When too much urea is presented it simply is not excreted, and passes along in the blood current in the way that it came. The kidneys excrete what they can, but no more, so that reducing the surplus urea does not afford any rest to the eliminating organs.

The second of the points that had interested him more particularly was

HOW TO MAKE GOOD THE LOST ALBUMIN.

This is a matter of the greatest importance, for the fatal termination of Bright's disease is in many cases fairly at-

tributable to the impoverishment of the blood resulting directly from the draining away of its albumin in the urine. It seems rational, therefore, to supply, if possible, what is lost in this way by a diet containing the material in greater quantity. One should not be misled in the dietetic management of albuminuria by a reasoning based upon the treatment of glycosuria, for the two affections are very dissimilar.

DR. PEABODY said that the practical outcome of Dr. Robinson's remarks was, that we should give to every patient with chronic Bright's disease milk up to the point of toleration. When this point was reached we must experiment with other foods until we found out what kind was best borne by, and most acceptable to, the patient, and had the most favorable influence upon his disease.

DR. CLEVELAND said that his experience had led him to think that Dr. Robinson had not expressed it too strongly when he advised a faithful trial of milk diet, for he believed that this, when the patient was able to bear it, was of the greatest benefit.

DR. DEBOUT D'ESTRÉES said that he had nothing new to add to the discussion on the dietary in Bright's disease, but he wished merely to refer to the fact, which had been not infrequently observed, of the disappearance of albumin from the urine, in cases of Bright's disease, during an attack of gout. An English writer had reported a case in which, in the same individual, having at one time glycosuria, at another albuminuria, the sugar or the albumin, as the case might be, disappeared entirely whenever he suffered from his periodical attacks of gout. The speaker himself had observed the same thing more than once in patients with albumin in the urine.

DR. DANA referred to the pretty generally accepted belief that uræmic poisoning was due in part to the action of accumulated potash salts, and of the poisonous products of digestion. He thought that this might have a not unimportant bearing on the dietetic management of Bright's disease. Perhaps the employment of sterilized milk and the avoidance of foods containing any ferments, might be of service in these cases. It should not be forgotten that milk is not a perfect food except for growing children; and it should also be remembered that it is a nitrogenous food. His experience had been that the use of milk in large quantity was almost invariably followed by an increase in the amount of albumin in the urine. Meat and malt, and distilled water, or spring water, formed a good substitute for milk as a diet, when some change was indicated.

DR. F. P. KINNICUTT said that Korkunoff, of St. Peters burg, had shown that the excretion of albumin in chronic nephritis, in individuals kept under as nearly as possible identical conditions, varied considerably from day to day; this diurnal variation he personally had observed, when making some investigations several years ago on the effect of nitro-glycerine on the albumin excretion in chronic nephritis. In his cases, the actual daily excretion of albumin in grains had been determined. This natural (?) variation should be borne in mind in deductions as to the effect of any particular diet in this disease.

DR. ROBINSON said that he was often in doubt concerning the proper regimen for a patient suffering from Bright's disease, and he generally followed the plan mentioned by Dr. Peabody, viz., to give milk up to the point of toleration, and then to try something else. This whole question of diet in Bright's disease is one that needs careful study, and no fixed rule can be laid down. A patient, for instance, suffering from enlarged heart and profound anæmia could not stand a pure milk diet, and would be injured rather than benefited by it.

DR. A. H. SMITH said that, in his view, the diet that is followed by the least excretion of albumin in the urine is not necessarily the best one for the patient. When a person suffering from Bright's disease is taken to the hospital we are worried not so much by the large amount of albumin as by the small amount of urine passed. We give milk, and the quantity of urine is increased. Is this in consequence of the milk diet, or is it a mere coincidence?

DR. J. WEST ROOSEVELT made a demonstration of some possible

FALLACIES IN THE PHLOROGLUCINE-VANILLINE TEST

for free hydrochloric acid in the stomach. He had obtained a red color, very similar to that occurring with hydrochloric acid, with solutions of carbonates containing free carbonic acid, and he had also found that free hydrochloric acid, even in fairly large amount, failed to give the reaction in the presence of decomposing bouillon. The reactions of phloroglucine-vanilline with the sulphides and other substances were also shown. The speaker referred to the experiments made by Schaefer with this test in the presence of many of the vegetable acids, and to his conclusions that it was not always satisfactory. Dr. Roosevelt thought that clinicians should not rely too implicitly upon this test, at least until it had been tried more thoroughly and all possible sources of error in its application were known and could be guarded against.

DR. F. P. KINNICUTT said that Dr. Roosevelt's experiments were of interest. The chemistry employed in examining the secretions and contents of the stomach, probably was not faultless, the results obtained by equally well equipped chemists in various parts of the world being somewhat conflicting. Nevertheless, there was a very general consensus of opinion among the best-known clinicians abroad, as to the clinical value of the tests referred to. Clinical results must be accepted, even if the chemistry by which they were obtained was not without flaw.

The Society then adjourned.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON THEORY AND PRACTICE OF MEDICINE.

R. C. M. PAGE, M.D., CHAIRMAN.

DR. J. C. MINOR read a paper (see p. 6) on

THE MEDICAL TREATMENT OF TETANUS.

DR. E. D. FISHER read a paper on

CEREBRAL SYPHILIS.

It was not his intention, he said, to take up the subject of specific tumors or inflammation of the membranes, but to confine his remarks more particularly to disease of the vessels. In speaking of the pathology of cerebral syphilis, he said that, in the tertiary stage, the changes, whether in the form of a gumma or merely affecting the arteries, had unquestionably a specific character; and this led him to believe with Rumpf that the virus itself was still active, and that the changes were not due to the effect of a poison which had expended itself, but left its impress on the system. Also, to sustain this clinically, he felt sure that there were found many cases transmitting syphilis late in the course of the disease, in which these hereditary cases then passed through the same class of symptoms as when the disease was transmitted early in its course.

Meyer considered as almost pathognomonic of syphilis a matting together of the dura and pia, with softening of the cortex, since in pachymeningitis from other causes this rarely occurred. According to Heubner, it was a fact characteristic of the pathological changes in syphilis of the arteries, as distinguished from atheroma, that the large arteries alone were affected in atheroma, and that continuous tracts were involved; while occlusion occurred by thrombosis, and never by a narrowing of the lumen of the artery. The process consisted of a simple hypertrophy, resulting in calcification; there being no new-growth. In syphilis, on the other hand, both large and small arteries were affected; the tendency being, however, toward the small and middle-sized vessels. We might, indeed, have thrombosis; but the marked lesion

was narrowing and final occlusion of the vessels from the extension of the new-growth internally, though rarely in the endothelial lining. The process was rapid, and differed from atheroma in that it was not continuous, but occurred in plaques. Arterial disease might occur entirely independent of gummata, and, according to Down, the vessels of the pia were very frequently involved, leading to softening and atrophy of the cortex. The tendency to the formation of new vessels, with thin walls so characteristic of all granular tissue, was here present; so that we had at first a tissue richly supplied with vessels.

Rumpf placed the origin of the arteritis in the middle coat of the vessels, and insisted on its character of granular tissue similar to that found in all syphilitic growths. He admitted the difficulty of differentiation microscopically from atheromatous arterial changes, but believed that a special bacillus could here be found which was the same for the primary chancre and the late growth. A drawing of his representing syphilitic arteritis, in which the narrowing of the lumen was clearly demonstrated, corresponded very closely to a microscopical section of the basilar artery in a case of Dr. Fisher, the history of which he related at the close of the paper.

In treating of the symptoms of cerebral syphilis, he referred first to the psychical changes often present. While sometimes sudden in their onset, they were more frequently gradual, extending over months, or even years. We noticed a general loss of mental power, the ethical nature seemed to suffer, the memory became weakened, and there was often a feeling of loss of power of performance similar to that met with in neurasthenia of the brain. Insomnia independent of cephalalgia was one of the early symptoms, and always a serious one, and it sometimes had associated with it somnolence, or even stupor. Headache was perhaps one of the most frequent of all the early symptoms. It was, however, if localized, of either a cranial bone or dura lesion. It was very often absent when the lesion was situated in the arteries. The cranial nerves, and especially the third, fifth, and sixth pairs, were early affected, either partially or completely. Hutchinson said that he had never seen the seventh nerve alone affected, and considered this an extremely rare occurrence. He was equally strenuous on the diagnostic value of affection of the fifth, as indicating syphilis.

In arterial disease unassociated with meningitis or tumor, we often found the single paralyses of the cranial nerves. Epileptic seizures were frequently present, and as the inflammation was usually diffuse rather than circumscribed, they were more often general than localized. As regards the condition of the eye, Dr. Fisher called attention to choroiditis and retinitis as indicative of an already existing affection of the cerebral vessels. A cloudiness of the disk, appearances of atrophied spots in the fundus, traces of a past retinitis or choroiditis, and gummatous enlargements, especially involving the terminal arteries, naturally aided in making a positive diagnosis. As a diagnostic point, any interference with vision in a part of the field, or a general loss of acuity of vision in the young, should lead to the suspicion of syphilitic disease of the cerebral arteries.

Paralyses of parts widely separated were strongly diagnostic of syphilis. Also hemiplegias coming on without loss of conciousness, in which the paralysis was preceded by numbness and tingling, and gradually extended from the arm to the leg (especially if there had been previous irritability for weeks or months, impairment of memory, and perhaps headache, confusion of ideas, and somnolence or insomnia), occurring in persons under forty, were probably specific.

DISCUSSION.

Dr. William H. Thomson said that the paper was a valuable contribution to a subject of very great interest, and very great obscurity. The differential diagnosis of the various forms of cerebral syphilis was often a very difficult matter. In the first place, the question arose, Have we syphilis at all to deal with? The nervous symptoms alone were not sufficient to determine this point, and it was necessary, therefore, to make an examination over the body of the patient. There was one mark which he regarded as of considerable importance in this connection, and that was tenderness on pressure at the junction of the sternum with the ensiform cartilage. It was almost uniformly present in syphilitic patients, and its diagnostic value was, therefore, very great. It being reasonably sure that the patient was suffering from cerebral syphilis, it must then be determined whether he had meningeal trouble, syphilitic tumor, or vascular disease. If the latter, we should endeavor to find out what particular form of vascular syphilis was present. Syphilis was to be suspected in any case which was characterized by variableness and inconsistency; in which it differed from other forms of disease. In meningitis, headache was the most marked characteristic. In the second place, we had the gradual development of the symptoms. Thirdly, we should examine the condition of the vessels generally, and see whether they are soft and natural. In syphilitic tumor we had to rely very much on the condition of the eye; and choroiditis was much more commonly present than retinitis. Sluggishness of the pupil, which had been referred to in the paper, he had often noticed, though he had not been aware of its diagnostic significance; and he said he was very glad to have his attention called to this point. Sometimes, with meningitis or tumor, there were symptoms of insanity and epileptiform seizures.

About a year ago, he had been called in consultation in the case of a lady well advanced in years, who was in a comatose condition. There was no evidence of kidney disease, indicating that the trouble was uræmic, and pressure upon the sternum elicited groans from the patient, notwithstanding the coma. Suspecting, therefore, that the trouble was due to cerebral syphilis, he advised specific treatment, and the patient afterward recovered. Yesterday he was called in to see the husband of this lady, a man seventy years of age. About two weeks ago he began to be affected with confusion of speech, great irritability, and motor symptoms. These motor symptoms were not of a paralytic kind, but referable to inco-ordination. Depression alternated with excitement, and he became quite emotional. He also had insomnia at night, and suffered from somnolence in the daytime. Dr. Thomson said that he had very little doubt that this patient was suffering from cerebral endarteritis.

Dr. Landon Carter Gray said that if we started from the prime anatomical lesion of syphilis, the round cell, we could get a better idea of syphilitic developments. It was a characteristic of the syphilitic round cell that it had an enormous vitality. It would live for a long time in the system, and would undergo retrograde metamorphosis without the formation of pus. As long as the cell caused no structural disease by its presence the prognosis was favorable. We did not yet know all the forms of cerebral syphilis, but some of them were sufficiently familiar. There might be in the first place a chronic interstitial encephalitis, scarcely distinguishable from that of general paresis except by its slower progress. Secondly, there was pseudo-encephalitis, in which there was great danger from sudden death. In other cases the disease attacked the arteries. Precisely what the lesion was we did not know, but there did not seem to him to be anything pathognomonic about the affection. Finally, there was an implication of the meninges; (1) of the dura, causing headache; (2) of the pia, involving the cortex.

In the majority of instances it was necessary to make the diagnosis from the conditions found in the brain, rather than from evidences of syphilis derived from other sources; and in a paper which he read last year before the Philadelphia Neurological Society, Dr. Gray said he had cited certain groups of symptoms which might fairly be regarded as indicative of specific infection, although they

afforded only proof amounting to a presumption. These symptom groups were as follows:

1. Quasi-periodical cephalalgia of a peculiar kind.

It was relieved by iodide of potassium and mercury, but not by opium. It might be accompanied by obstinate insomnia and by considerable irritability of temper. In this headache quinine was often of as much benefit as in cases not syphilitic.

2. Hemiplegia under forty years of age.

3. Cephalalgia, followed by hemiplegia, which has a singular relationship to one another, in that the cephalalgia ceases immediately upon the supervention of the hemiplegia, and does not recur.

4. Convulsions in the adults, which have not been preceded by convulsions in infancy, and are not of traumatic or nephritic origin, or due to pregnancy, or in an individual subject to migraine.

5. Symptoms indicative of a lesion at the base of the brain.

Of course, tuberculosis had a predilection for the same site, but it could usually be excluded by the history of the case. Tumors of non-specific origin might also be found there, but usually they are not so diffuse as a syphilitic infiltration, and the specific lesions of this part of the brain are generally preceded by a characteristic cephalalgia.

6. A comatose condition extending over days or weeks, not traumatic, meningitic, diabetic, nephritic, or from typhoid fever.

Dr. C. L. Dana said that the symptomatology of cerebral syphilis was very difficult, but from the contributions that had of late years been made to the subject, we could now form a pretty correct picture of it. The pathology, however, still remained in a very unsatisfactory state. He could not believe that the lesions which are observed were due to Dr. Gray's round cell, since this anatomical factor was common to other conditions and affections. In the cases that he had seen there were four different forms of lesions.

They are: 1, Local hyperæmia; 2, local meningitis and gummatous changes; 3, cranial root neuritis, or neuritis itself; 4, degenerative changes resembling those from other causes.

Dr. Fisher, in the course of his remarks in closing the discussion, said that he had found the tenderness of the sternum to pressure, as pointed out by Dr. Thomson, a valuable diagnostic sign of syphilis. As to the round cell referred to by Dr. Gray, he doubted whether it was of syphilitic origin, and thought if there that was anything specific about the pathogeny of the disease, it was a bacillus.

Tubercle Bacilli in the Sweat of Phthisical Persons.—Dr. Eugenio di Mattei reports in the *Archive prio le Scienze Mediche*, vol. xii., No. 14, 1888, a number of experiments made to determine the possibility of transmitting tuberculosis through the medium of the sweat. In the first series, in which the sweat was taken from the skin without any precautions, numbers of tubercle bacilli were found. In the second series the author cleaned carefully a portion of the integument, covering it subsequently with a glass to prevent possible contamination from the air, and then examined the sweat excreted on this part. Here no bacilli were found, showing that the micro-organisms found in the first instance were deposited upon the skin from the surrounding atmosphere, and that none passed through the sweat-glands.

The Supposed Remedial Agency of the odor of cows and cow-stables in cases of consumption is to be tried at Reinickendorf, near Berlin, on a unique scale, says the *New York Analyst*. A vast circular building has been erected, in the basement of which several hundred cows will be kept, and the odor of the stables will be conducted to the rooms in the upper stories!—*Boston Med. and Surg. Journal.*

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, November 14, 1888.

W. P. Northrup, M.D., President, in the Chair.

Dr. Sellew presented some specimens illustrating the lesions of

GENERAL TUBERCULOSIS,

taken from a child three and a half years of age, who, up to within four days of her death, though convalescing from whooping-cough, had otherwise been well, with the exception of slight listlessness for about a week. Four days before death she was taken with vomiting and fever, followed by delirium, stupor, convulsive twitchings of the face, slight nystagmus, irregular breathing, and occasionally the "hydrocephalic" cry. Physical examination gave only negative results.

Autopsy.—Twenty-four hours after death. The body was well nourished. There was tubercular meningitis at the base of the brain gluing together the large fissures. Moderate exudation at the base. The convolutions were much flattened. The ventricles were enlarged and contained clear fluid. There were no tubercles found in the lungs. One or two bronchial glands were slightly enlarged and cheesy. The liver and spleen were normal, with the exception of the presence of small tubercles. The kidneys were slightly enlarged and the markings moderately distinct. There was moderate catarrh of the stomach and intestines, but no ulcers.

In connection with this case, it was thought to be of interest to ascertain the frequency with which the brain is involved in cases of acute general tuberculosis, and it was found, by reference to the history of cases at the New York Foundling Asylum, that of fifty-nine cases of general tuberculosis, thirty-nine were associated with tubercular meningitis, while in twenty there was no involvement of the brain. Thus, in about two-thirds of the cases there was meningitis, and in about one-third the tubercles were confined to the other viscera.

Dr. Lewis Hall Sayre exhibited the head and neck of a femur, removed five weeks previously from a boy seven years of age, who was suffering from

HIP-JOINT DISEASE.

Up to the age of four years, the boy had enjoyed perfect health. At that time he had had a severe attack of diphtheria followed by serious inflammation of the eyes, which kept him confined to his room for some time. He also had severe middle-ear disease involving the mastoid process. It was then that the first symptoms of hip disease manifested themselves. The course of the disease was marked throughout by comparatively little pain, although there had been suppuration and abscess formation. When the speaker first saw the boy the thigh was flexed at nearly a right angle with the trunk, and there was a large fluctuating tumor in the neighborhood of the trochanter major. It was decided to operate, both for the purpose of correcting the deformity and of giving exit to the pus. When the capsule of the joint was opened it was found that the head and neck of the femur were carious, and these parts were accordingly excised. The acetabulum was not diseased. At present the wound is completely closed, some motion at the hip is possible, and the boy bids well to make a fair recovery. Had it not been for the deformity which called for operation, this case, the speaker thought, would have done remarkably well without exsection.

Dr. Henry P. Loomis presented a stomach removed from the body of a man who had died from

ACUTE MERCURIAL POISONING.

The man, who was twenty-six years of age, took with suicidal intent ten grains of the bichloride of mercury in a glass of water. Soon afterward he repented of the act and applied for relief at the Chambers Street Hos-

pital. His stomach was syphoned; after which eggs and milk were freely administered. He gradually became weaker, with increased frequency and great feebleness of the pulse, and coldness of the extremities. His pharynx was intensely congested, and he complained of severe pain on deglutition. There was constant pain in the epigastrium, and he complained of a sense of burning and constriction in the throat. He vomited constantly a greenish-colored mucus, occasionally streaked with blood, but at no time did the bleeding amount to a free hemorrhage. His urine was frequently examined and always found normal. The countenance assumed a turgid and anxious expression, and four days after taking the poison he died from exhaustion.

Autopsy.—Fourteen hours after death. The mucous membrane of the mouth, throat, and œsophagus was wrinkled and covered with a white coating. The stomach showed at the cardiac end, along the greater curvature, and especially near the pylorus, dark, mottled, and irregular patches; the rest of the mucous membrane, which appeared normal, was covered with a dark, thick, tenacious mucus. No blood was found in the stomach, but two superficial ulcerations were found near the pyloric valve. Microscopical examination of the irregular patches showed that they were due to capillary hemorrhages in the mucosa. The intestines were normal, with the exception of spots of congestion and ecchymosis in the large intestines. The kidneys were apparently normal, but microscopical examination showed a slight amount of parenchymatous degeneration. The liver was intensely congested, but otherwise normal.

Dr. Loomis also presented a specimen of

ANEURISM OF THE ABDOMINAL AORTA,

from a man fifty-three years of age, who was admitted to Bellevue Hospital in a dying condition. No history was obtainable. The diagnosis of lobar pneumonia was made, and the presence of an aneurism was not suspected. The patient died twenty hours after admittance.

Autopsy.—Thirty-six hours after death. The lower lobe of the right lung was in the second stage of pneumonia. The heart was dilated. There was no valvular change. The thoracic aorta showed throughout its whole extent the evidences of a chronic endarteritis, calcareous plates being scattered in places along its wall. Communicating with the abdominal aorta, just below the cœliac axis, was a sacculated aneurism about the size of a small orange, projecting backward and to the left. The opening into the aneurismal sac measured about an inch across. The sac contained no fibrin or blood; along its lower wall was a calcareous plate half an inch square. The aneurism had given rise to no symptoms during life. The liver was cirrhotic, and the kidneys showed the changes of chronic diffuse nephritis.

Dr. Mendelson asked what seemed to be the actual cause of death in the case of mercurial poisoning.

Dr. Loomis replied that the real cause of death was obscure; the man simply grew weaker and weaker until he died.

Dr. Herman M. Biggs presented a liver removed from the body of a Chinaman who had died in Charity Hospital, which showed the presence in great numbers of

DISTOMA HEPATICUM.

The autopsy had been made only a short time before the meeting, and consequently he had not had time to prepare a full report of the case.

Dr. Biggs also presented a specimen showing

RUPTURE OF THE AORTA.

The patient was a woman, an inmate of the almshouse, who, while sitting quietly, suddenly fell over and died. At the autopsy there was found a rupture of the aorta immediately above the valve. At the seat of rupture the adventitia was found dissected from the media for a short distance, but it was not properly a dissecting aneurism, for the blood had evidently made its way between the media and adventitia at the time the rupture occurred. At the point of rupture the aorta did not seem, to the naked eye, to be diseased, but was apparently unusually thin. There was atheroma, however, in the neighborhood. These cases of rupture of the aorta without previous dilatation were rare.

Another specimen illustrated

ANEURISM OF THE AORTA.

There was a large aneurism of the ascending portion of the arch of the aorta, with dilatation of the arch, and adhesions to the sternum. The man had been a helper in the hospital for some time. He had had no symptoms pointing to aneurism, and the condition was discovered only accidentally. The man died suddenly while at stool. There was no rupture of the aneurism, so that the immediate cause of death was somewhat obscure. Possibly death had resulted from suffocation caused by additional compression of the trachea during the act of straining at stool, as there was marked compression and flattening of the trachea from pressure. The aneurism communicated with the aorta through a large opening. The case occurred in the service of Dr. Janeway.

Another specimen presented was one of

RUPTURE OF AN AORTIC ANEURISM.

The aneurism occupied the ascending portion of the arch of the aorta, and the perforation was the size of a pin-hole. Death did not follow until the expiration of about three-quarters of an hour after the first symptoms of rupture occurred. This specimen was interesting for this reason, as death after rupture of aortic aneurism was usually instantaneous. The lesions found in the aorta were those of acute endarteritis.

The speaker said that he wished to call attention again to the frequency of aortic aneurism as a cause of sudden death. About six months ago he had reported thirty-four cases of thoracic aneurism with autopsies, and had laid especial emphasis upon the frequency of this affection as a cause of sudden death without previous marked symptoms. He thought that its frequency was not appreciated by the profession generally, because these cases did not often come to the autopsy table for examination. They were all coroner's cases, and if there were no suspicious circumstances attending death, the coroner's physician did not usually perform an autopsy, but ascribed death to cerebral hemorrhage or heart disease. In a large proportion of such cases an autopsy revealed an aortic aneurism with or without rupture, or a rupture of the aorta or heart. He had presented two other such cases before this autumn, and the three cases now presented had come under observation during the preceding two weeks. The thirty-four cases presented last spring had, with two or three exceptions, been seen within a a period of about eighteen months. Aside from this point which he wished to emphasize, these cases had some features of especial interest. Many of the cases that he had reported had been seen through the courtesy of Dr. W. T. Jenkins, coroner's physician.

The last specimen presented was one of

ULCERATIVE ENDOCARDITIS,

with perforation of one of the aortic cusps. Long festoons of fibrin were found attached to the valves. An examination for bacteria showed the presence of the staphylococcus pyogenes aureus.

Dr. Mendelson, referring to the cause of sudden death in the case of aortic aneurism without rupture, said that he thought the explanation of death from compression on the trachea was not a satisfactory one. It was hard to suppose that a person would die so quickly, and without a struggle, from simple suffocation. He thought a more rational explanation was that death resulted from paralysis of the heart due to sudden inhibition from stimulation of the vagus nerve.

Dr. Prudden said that when death resulted from the presence of a foreign body in the larynx, the person often died very suddenly and without a struggle.

Dr. Biggs said that he had seen two or three such cases in children. In one case, death was caused by the lodgement of a collar-button between the two vocal cords, and in another by the presence of a screw in the larynx.

Dr. Mendelson said that this class of cases seemed to him but to prove the point he wished to make, for there were none of the usual signs of death by suffocation present. It was more probable that in them, too, death was caused by the reflex stimulation of the vagus through the laryngeal nerves, and consequent cardiac paralysis by inhibition. In the case of aneurism just described the irritation arose probably from the sudden distention of the sac, caused by straining at stool, stretching or rupturing some of the fibres of the recurrent laryngeal, or other branches of the vagus in intimate relation with the aorta.

Dr. Frank Ferguson presented a specimen of

VOLVULUS.

The patient had been seen by a number of physicians, but it was not thought advisable to operate.

Dr. H. J. Boldt said that the history did not make it clear why an operation was not performed, though he doubted not that sufficient contra-indications were evident to those who had the case in charge. It was a fact, however, that many cases of intestinal obstruction were allowed to go on to a fatal termination, which might have been averted by a timely operation. He had himself never seen a case of "idiopathic" peritonitis, and he believed that many patients, who would almost surely die if medicinal measures alone were relied upon, might be saved by early surgical interference.

Dr. John S. Thacher presented a unique specimen, consisting of

A SAC ENCLOSING THE SMALL INTESTINE,

which was discovered at the autopsy of a man dead of portal thrombosis. Some three years ago the patient had had a hemorrhage from the stomach, and another hemorrhage from the stomach and bowels had occurred about a month before death; otherwise the history was negative. The portal vein was found obstructed by a thrombus, but this had had nothing to do with the other condition. The sac enclosing the intestine was a thick, white, and glistening membrane. The only explanation that suggested itself to the speaker was that a knuckle of the duodenum had in some way been brought to make pressure on a portion of the mesentery; this had yielded a little, making a sort of pouch, and then more of the intestine had followed, the mesentery yielding still further, until in this way a complete sac had been formed.

Dr. Thacher then presented a specimen of

ABSCESS OF THE LIVER.

The patient had been ill for about five months with pains in the right hypochondriac region. At the time of his admission to the hospital he was coughing up some blood and pus, and continued to do so for some time. At the autopsy it was found that the abscess of the liver had ruptured through the diaphragm into the right pleural cavity. The right lung had been almost entirely destroyed by the pus.

Dr. Biggs asked whether the speaker had ever seen abscess of the liver occurring independently of ulceration in the cæcum or other parts of the intestine.

Dr. Thacher replied that he had seen a case of this kind very recently, in which no evidences of ulceration were encountered in any portion of the intestine.

Dr. Ferguson thought that intestinal ulcers were almost always present. Sometimes it would be found that ulceration had existed, but that cicatrization had taken place, so that the evidences of the previous condition would be manifested only on careful search.

Dr. J. S. Thacher reported from the Committee on Microscopy concerning the specimens of inflamed and necrotic lung, and of intestinal ulcers from a child, presented at the meeting of October 24th, by Dr. Holt. Microscopical examination of sections of the lung showed the usual appearances of broncho-pneumonia, with an unusual massing of leucocytes in portions. No bacteria were found.

Microscopical examination of the ulcer of the intestine showed along all of the free border of sections an abundance of bacteria, rod-shaped, many slightly curved, some united so as to resemble spirilla. They appeared uniform, and at the site of the ulcer were found at a considerable depth in the inflamed tissue.

The Society then went into executive session.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE BRADSHAW LECTURE AT THE COLLEGE OF SURGEONS: MR. HUTCHINSON ON MUSEUMS; THE SPECIAL VALUE OF EDUCATIONAL AND CLINICAL MUSEUMS—THE DEBATE AT THE PATHOLOGICAL SOCIETY ON THE MORBID ANATOMY AND PATHOLOGY OF CHRONIC ALCOHOLISM: DR. PAYNE'S INTRODUCTORY ADDRESS; SPEECHES BY DR. GEORGE HARLEY, DR. LIONEL BEALE, DR. STEPHEN MACKENZIE, AND DR. MOTT—THE MEDICAL COUNCIL AND ITS RECENT SEVERE ACTION.

London, November 11, 1888.

The Bradshaw Lecture for the present year at the College of Surgeons was delivered on Thursday last, by Mr. Hutchinson, F.R.S. The lecturer selected for his subject "Museums in their Relation to Medical Education and the Progress of Knowledge." By his so doing one was irresistibly reminded of the first Bradshaw lecture delivered within the same walls, in 1882, by Sir James Paget, who, although nominally taking for his subject "Some Rare and New Diseases," really devoted no inconsiderable part of his lecture to a dissertation upon the value of museums and the advantages to be derived from studying in them. Although discoursing upon a similar subject, Mr. Hutchinson's lecture was, as might be imagined, no mere repetition of the address given by his eloquent predecessor, but an original discourse of great value, exemplifying the many-sided nature of the subject. Mr. Hutchinson compared a museum to a library. They were, he said, twin institutions, having for their common aim the advance of knowledge. A library should always partake of the attributes of a museum, and a museum should always be in some sort a library. A museum which did not avail itself freely of the aid of printed descriptions, labels, and catalogues, failed to develop a large half of its uses. From the time of Alexander the Great and Aristotle downward, the collectors of museums had almost always been the prolific writers of books; Aldrovandus and Hunter were good examples of this. In some respects, museums had a great advantage over libraries. Thus a library always contained much less than it assumed, a museum usually much more. Books contained the statements of opinion often mistaken, and narrations of supposed facts which it might be equally impossible to believe or to refute. The specimens in a museum spoke for themselves only, and were open to the freest re-examination; they might teach but little, but they did not lead us astray. The museums of our forefathers were very heterogeneous, and something of this still survived in our present institutions. There was little doubt that in the future the development of special museums and of special departments in general museums would receive greater attention. A neglected

division of the subject was that of educational museums. A museum of reference, one designed to aid the research of the well-instructed who were working for the advance of knowledge, ought to take very different lines from one intended for the education of beginners. Almost all our English museums were as yet museums of reference. We had none which could claim to be designedly educational. This was a great want, not only in professional museums but in those designed for the general public. Neither as regarded general science nor medical pursuits, had we any collections of illustrative objects but such as were so heterogeneous and multifarious as to be very confusing to younger students. Educational museums should contain no mere curiosities, and but few rarities, but should be supplied with good illustrative specimens of common things, not too numerous, and so liberally provided with printed description as to fully explain themselves. The museum for reference had a very different scope, and should aim at a very different standard. Nothing should be too rare or too recondite to be suitable for it. Referring to the work done by Aldrovandus, who employed one painter for thirty years, besides obtaining the help of several of the best engravers of the day, to copy specimens of which he could not obtain the originals, Mr. Hutchinson urged that we should endeavor to complete the splendid collection of the College of Surgeons. By means of the camera we could work with far greater ease than Aldrovandus did. The value of photographic and pictorial illustration was dwelt on at some length by the lecturer, and especially in reference to dermatology. Mr. Hutchinson said he wished to advocate the formation of "clinical museums," viz., museums devoted to the illustration of disease as seen in the living subject. As our ordinary pathological collections exhibited in permanent preservation the treasures of the post-mortem room, so would this display for us those of the hospital ward. It would accomplish this by means of casts, models, portraits, and photographs. While almost all our museums possessed a few illustrations of this kind, in none had anything like completeness been attempted. Such a collection would be useful alike to the student, the practitioner, and the investigator. Though costly, in the first instance, yet when once formed it would, in many of its sections (especially those of photography and portraits), be easily and cheaply copied. The lecturer also referred to the value of making a complete collection of surgical instruments.

At the last meeting of the Pathological Society the debate on "The Morbid Anatomy and Pathology of Chronic Alcoholism" was opened by Dr. Payne. In his address Dr. Payne dwelt at some length on the historical aspects of the question. The sixteenth and seventeenth centuries, he said, saw the rise of morbid anatomy, and it was then that, for the first time, anatomical changes were referred to inebriety. In Harvey's lectures, though there was nothing referring directly to alcoholism, diseased livers, evidently produced by this cause, were described. At the beginning of the eighteenth century distilled spirits began to be generally drunk, and a rapid increase of alcoholic diseases followed. When we came to the era of the rise of pathological histology (from 1850 to the present time), the most conspicuous advance was the demonstration of minute changes in various parts of the nervous system, and the uniformity of the action of alcohol throughout the whole body became manifest. The question of whether alcohol was a poison was discussed, and Dr. Payne said that it was quite clear that it was a functional poison of the narcotic class. Its action on the human body was threefold, viz.: 1, As a checker of oxidation, thus favoring the accumulation of fat and producing fatty infiltration or steatosis in parts naturally disposed to it; 2, as a functional stimulus or (in a larger dose) as a functional poison on the nervous system, especially the brain; 3, as a tissue-poison, destroying the vitality of some tissue-elements and setting up inflammation in others. Generally speaking, the parenchymatous elements, nervous or epithelial, suffered degenerative or necrotic changes, while the connective-tissue elements or stroma proliferated and underwent chronic inflammation. Dr. Payne then proceeded to describe the morbid changes produced by alcohol in various organs.

Dr. George Harley then spoke, and said that although it was easy to describe and to understand the action of alcohol when taken in excess, it was quite another thing when one had to deal with the changes produced by alcohol taken frequently in small quantities. For every drunkard there were fifty others who suffered from the effects of alcohol in one form or other, and among them were persons who had never been intoxicated in their lives. The liver was the organ which was not only the earliest, but the most generally affected by the daily imbibition of small quantities of alcohol, and Dr. Harley showed, from statistics, that in men engaged in occupations in which they were exposed to the temptation of "nipping" the death-rate was higher than in men of the same ages otherwise employed. It was not difficult to understand why the liver was the organ most affected, when it was remembered that alcohol taken into the stomach was absorbed by the branches of the portal vein, conveyed directly to the liver, and had to filter through its tissues ere it could get into the general circulation. He had himself shown, in 1853, that the mere injection of alcohol into the portal vein in dogs was sufficient to cause them to become diabetic in two or three hours. Alcohol acted on the tissues of the body as a chemical poison, and several other illustrations of its mode of action were given. While alcohol was not only a medicine in disease, but a food in health, statistics proved that its prolonged and habitual use in a much smaller amount than was habitually supposed was sufficient to materially shorten life.

Dr. Lionel Beale then showed and explained several diagrams from microscopical sections of hepatic cirrhosis. These appeared to show that what was ordinarily considered as increase of the connective tissues of the organ really consisted of débris of the normal tissue of the gland which had been destroyed.

Dr. Stephen Mackenzie then related the case of a girl, twelve years of age, who was admitted into hospital and found to be suffering from enlargement of the liver. As there were no urgent symptoms she was discharged, no conclusion having been come to as to the cause of the enlargement. Some time later she was attacked with uncontrollable hæmatemesis and died within a week. At the post-mortem an extremely contracted, typically cirrhotic liver was found. No history of consumption of alcohol by the child could be obtained.

Dr. Mott then described the case of a man who was known to be a drunkard, and who died collapsed shortly after admission to Charing Cross Hospital. Fatty degeneration of the ventricular walls of the heart was found after death. Dr. Mott remarked that in looking up the literature of the subject he found that Professor Schrötter (Ziemssen's "Cyclopædia") included alcohol among the poisons causing fatty degeneration of the heart. The discussion was then adjourned. Numerous drawings, specimens, and microscopical specimens illustrating the subject of the debate were on view.

The most memorable event of the recent session of the Medical Council has been their drastic action in removing from the register the names of two medical men who had acted as "covers" to unqualified practitioners. I believe this is the first occasion on which the Council have struck any medical man off the register for the offence in question. Their recent severity will doubtless act as a deterrent to other offenders, though to those whose names have just been removed the president, in announcing the decision of the Council, tempered justice with mercy somewhat by stating that the Council had, on a few occasions, restored to the register, after an interval, the names of persons whose names had been penally removed therefrom.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 16, 1888, to December 22, 1888.

ALEXANDER, CHARLES T., Lieutenant-Colonel and Surgeon. Detailed for duty on Army Retiring Board, to meet at Vancouver Barracks, W. T., at the call of the president thereof. Par. 20, S. O. 292, A. G. O., Washington, D. C., December 15, 1888.

KILBOURNE, HENRY S., Captain and Assistant Surgeon. Detailed for duty on Army Retiring Board, to meet at Vancouver Barracks, W. T., at the call of the president thereof. Par. 22, S. O. 292, A. G. O., Washington, D. C., December 15, 1888.

CARTER, WILLIAM F., Captain and Assistant Surgeon. By direction of the Secretary of War the leave of absence granted, S. O. No. 116, November 12, 1888, Department of Texas, is extended five months. Par. 4, S. O. 292, A. G. O., Washington, D. C., December 15, 1888.

MCCREERY, GEORGE, Captain and Assistant Surgeon. Granted leave of absence for one month. Par. 4, S. O. 265, Headquarters Division of the Atlantic, Governor's Island, N. Y., December 15, 1888.

HOPKINS, WILLIAM E., Captain and Assistant Surgeon. Detailed as member of the Army Retiring Board to meet at San Francisco, Cal., vice Major Henry E. Tilton, Surgeon, relieved. Par. 3, S. O. 294, A. G. O., Washington, December 18, 1888.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 29, 1888:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	21	2
Scarlet fever	236	50
Cerebro-spinal meningitis	4	2
Measles	329	16
Diphtheria	160	41
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

A MIXTURE FOR TROUBLESOME COUGH of a violent paroxysmal nature, often met with after influenza, is given by Dr. H. O'B. Deck, as follows:

℞ Cocaine hydrochlor. ..... gr. ii.
Morphinæ sulph. ..... gr. iss.
Ext. glycyrrhiz. liq. ..... ♏ xx.
Glycerini ..... ♏ xx.
Aquæ ..... q. s. ad ℥ iv.

M. Sig.—One dessertspoonful every two hours, till the cough is relieved, then less frequently. To be swallowed slowly.

—*Therap. Gazette.*

THE NAIL-BRUSH AS A SOURCE OF INFECTION.—The *British Medical Journal* has made quite a savage and wanton attack upon the nail-brush. This esteemed article of the toilet is thought by the *Journal* to be a dangerous and dirty thing. Such condemnation applies, of course, only to common and strange nail-brushes used in the hospitals. These may, it is thought, be carriers of infection. The question could be easily settled by inoculating pure cultures with tainted nail-brushes or washings from the same. It is but reasonable to assume at any rate that it would be safer if each surgeon should have his own nail-brush.

THE TREATMENT OF PRURITUS.—Correspondents of *The Lancet* send the following suggestions as to the treatment of this often-intractable symptom:—H. W. J. suggests that an undiscovered diabetes or inflammatory or cystic disorder of the cervix uteri will often render a pruritus vulvæ intractable. Barring these important causes, he should try the fifty per cent. ointment of ichthyol with lanoline. Surgeon, presuming there is no gout or uterine disease, recommends a mixture containing sod. bicarb., mag. sulph, and inf. gent., to be taken three times a day in sufficient quantities to keep the bowels moderately open. Also the following lotion, to be applied on linen cloths three or four times a day:—℞ Liq. plumbi, 1½ drachm; pulv. boracis, 3 drachms; zinci. oxid., 2 drachms; glycerine, 2 ounces; water to sixteen ounces. No alcoholic drink to be taken. Mr. Henry Ryley (West Brompton) has during a practice of thirty years found the disease yield to an outward application of the following:—Liq. plumbi, liq. op. sed. (Battey), ung. cetacei, and pure cream from the cow, of each one ounce. The ingredients must be well mixed and dispensed in a wide-mouthed bottle, to admit the fingers. Mr. J. F. Briscot suggests a systemic examination of the external and internal organs of generation for tinea, animal or vegetable, vascular caruncle, and other possible sources of irritation within the vagina or rectum, and an examination of the rectum. Dr. Thursfield (Leamington) asks if cocaine, either as a lotion or an ointment, has been tried. He suggests that the condition of the os and cervix uteri be ascertained, and that coffee be forbidden. Mr. J. C. Balfour (Redbourne) suggests that relief may be obtained by bathing the parts with a solution of boracic acid in water, or a lotion composed of hydrochloric of morphia, hydrocyanic acid, and water. Bromide of ammonium given at night as a sedative has also been found useful. Mr. H. E. Rowell (East Rudham) suggests, if no cause for the disease can be found, great cleanliness, and a lotion containing glycer. boracis, 2 ounces; water to 6 ounces. He also observes that in the 1888 edition of the "Universal Medical Sciences" a sitz bath of hot salt water (from one to five per cent.) just before retiring and an ointment of cocaine oleate and lanoline to be applied twice a day, are recommended by Piffard. Mr. Percy Newell (Ipswich) recommends a careful regulation of the diet and the use of vinolia. The following lotion is, he says, recommended by Dr. Atthill, in his work on "Diseases of Women":—Acid. carbol., 20 grains; tinct. opii, 4 drachms; acid. hydrocyan. dil., 2 drachms; glycerine, 4 drachms; water to 4 ounces. Mr. J. Wrixon (Watford) says that he has found the following prescription effectual:—Ung. plumb., hyd. nit. ox., and acid. borac., of each 2 drachms; cocaine (1 to 30), ½ ounce; ft. ung. This is to be gently rubbed on night and morning for a month, and the parts bathed in a lotion composed of two teaspoonfuls of borax to a pint of cold water. A strong infusion of green tea is also useful. R. W. W. suggests a trial of the following lotion:—Liq. ammon. acet., 1 drachm; acid. hydrocyan. dil., 1½ drachm; inf. tabaci to 8 ounces. The parts subject to irritation to be bathed two or three times a day. The inf. tabaci to be made by infusing sixty grains of bird's-eye tobacco in boiling water for a quarter of an hour. Ixion recommends vinolia, which, he thinks, will allay the irritation at once. The preparation is said to consist of zinc, antiseptics, etc.

PSYCHICAL SYMPTOMS FOLLOWING A DOSE OF MORPHINE.—Dr. S. H. Scheiber reports the case of a woman, aged fifty-four, who took three-fourths of a grain of morphine for the relief of neuralgia. She became unconscious, and remained so for two days. Upon coming to herself on the third day she could not speak, and later developed alexia and agraphia. There were also hallucinations. On the sixth day a bedsore appeared over the coccyx. This condition lasted for about six weeks, and then disappeared spontaneously, without any special treatment.—*La Riforma Medica.*

The Medical Record

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Original Articles.

ON CRANIO-CEREBRAL TOPOGRAPHY.

BY C. L. DANA, M.D.,

PROFESSOR OF NERVOUS AND MENTAL DISEASES, POST-GRADUATE MEDICAL SCHOOL; VISITING PHYSICIAN TO BELLEVUE HOSPITAL.

THE present article is an endeavor to present in as complete a manner as possible the subject of cranio-cerebral topography. This will include a description of the landmarks, and variations in shape and size of the skull; its vascular supply, together with that of the brain; an enumeration of the cerebral lobes and convolutions; and finally, a systematized description of the methods of locating the position of the fissures, convolutions, and lobes upon the scalp.

There is a great variation in the descriptions of cranio-cerebral topography. Some are incomplete, some are certainly inaccurate. The present great interest in cerebral surgery and localization justifies one in an attempt to secure greater uniformity and completeness in the matter. I have embodied some original observations by myself upon the cranio-cerebral relations in children, and have made studies and measurements of numerous crania, for the determination of certain guides in localization. I have also embodied the results of examinations of the interparietal and anterior occipital fissures in over twenty cerebral hemispheres; and present a diagram of the cerebral convolutions more correct in one or two details, I trust, than those of Ecker, now so widely used.

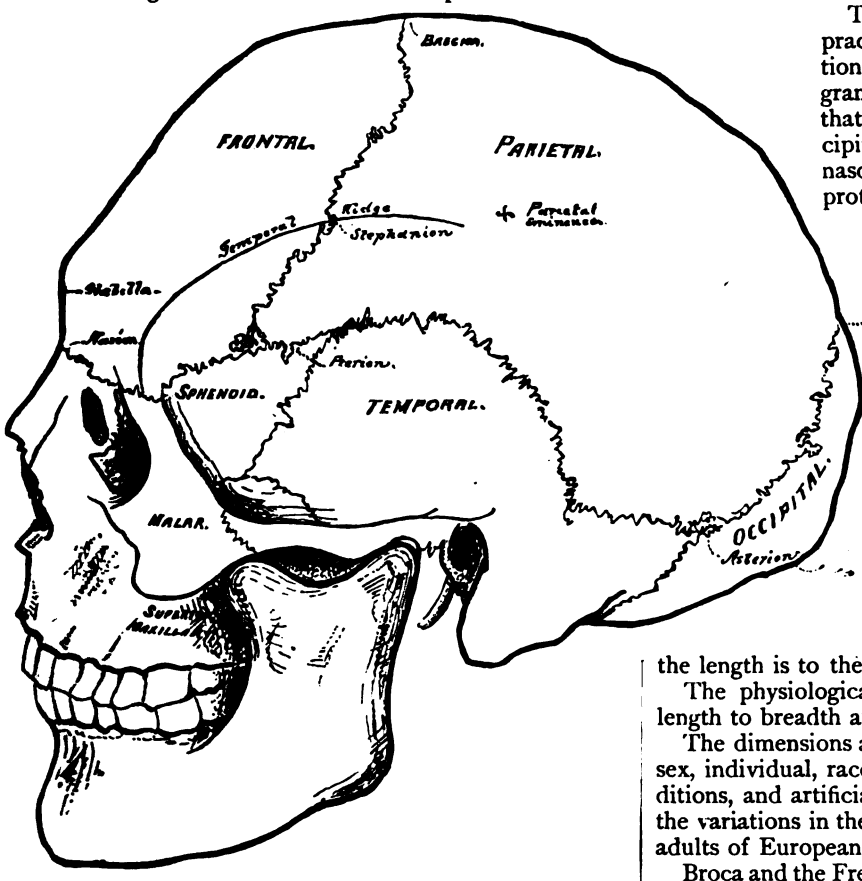

FIG. 1.

The skull landmarks.—There are certain sutures, points of union of sutures, and bony prominences upon the skull not described in ordinary anatomical works, about which it is important to know. The sutures that have to be found for purposes of localization are: The sagittal, the lambdoid, the squamous, the parieto-sphenoidal, and the coronal.

The bony prominences that must be felt are: The external occipital protuberance, or inion, the superior occipital curved line, the glabella, or prominence just above the naso-frontal suture, which latter is called the nasion; the temporal ridge, the parietal eminence, the mastoid process, the external angular process.

The points of union of the sutures have received certain names from Broca. The principal are: The nasion, the inion, the lambda, the stephanion, the pterion, the asterion.

There are others, but these are all of practical importance here. Their position is indicated in the accompanying diagram (Fig. 1). It should be remembered that the inion is identical with the occipital protuberance; the nasion is the naso-frontal junction; the glabella is the protuberance just above the nasion. It should not be confounded with the orbital ridges, on each side. In most descriptions the glabella is given as a landmark of measurement.

DIMENSIONS AND SHAPE OF SKULL.—*General Classification.*—Anthropologists make a general classification of skulls into:

The dolichocephalic, in which the antero-posterior diameter is to the transverse as 100 is to 75, or less.

The brachycephalic, in which the length is to the breadth as 100 is to 80, or more.

The mesocephalic, in which the length is to the breadth as 100 is to 75, to 80.

The physiological limits of variation in the ratio of length to breadth are from 100 to 70, to 100 to 90.

The dimensions and shape of the skull vary with age, sex, individual, race, and with certain pathological conditions, and artificial deformities. In general, however, the variations in the shape and size of the skulls of healthy adults of European and American races are fairly uniform.

Broca and the French anthropologists, Krause, Huschka, Weisbach, and lately Benedict, and the Italian anthropologists, have contributed greatly to our knowledge of these points.

Dr. Frederick Petersen has very carefully abstracted and tabulated the most important of Benedict's measurements, and to these I have added other figures from Benedict and Liharzik [1] (see Table).

The measurements are for the naked skull. The hair and scalp add about six per cent.[2] for surface measure-

[1] In twelve skulls which I measured in this city the naso-occipital arc ranged from 30 to 32.2 ctm.

[2] This amounts to about 3 ctm. in the naso-occipital arc.

Table of Cranial Measurements in Centimetres.

	Adults.		Physiological variation.	New-born.		End of 1st year.		1st to 7th year.		10th year.		7th to 18th years.	18th to 24th years.	End of 12th yr.	
	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.				
1. Greatest circumference.	52.0	50.0	48.5 to 57.4	34.0	34.0	42.0	42.0	34 to 46	....	49	47	46.0 to 49.5	49.5 to 52.25	....	Taken around glabella and maximal occipital point.
2. Binauricular arc.....	32.0	31.0	28.4 to 35 0	20.0	20.0	25.5	25.0	.....	27	.....	....	.....	.....	30	Measured from *b* over through bregma to *b*, or opposite ext. aud. meatus.
3. Volume.....	1,500	1,300	1,201 to 1,751	385 to 450	.....	700 to 1,000	.....	.....	....	1,300	....	.....	.....	....	{ Benedict and { Huschke.
4. Naso-occipital arc.....	32.0	31.0	28 to 38	22.0	22.0	28.0	28.0	.....	....	.....	....	.....	.....	....	*n β t*.
5. Naso-bregmatic arc....	12.5	12.0	10.9 to 14.9	7.7	7.7	.....	10.0	.....	....	.....	12	.....	.....	....	*n β*.
6. Bregmat. lamb. arc....	12.5	11.9	9.1 to 14.4	9.9	9.0	.....	10.0	.....	....	12	....	.....	....	....	*β* to *a*.
7. Lamb. occipital arc....	7.0	7.1	.....	... .	.....	.....	.....	.....	....	.....	....	.....	.....	....	*a* to *t*.
8. Antero-posterior diameter	17.7	17.2	16.5 to 19.0	.....	.....	.....	.....	.....	....	.....	...	.....	.....	. .	*s* to *o*.
9. Greatest transverse diameter.....	14.6	14.0	13 to 16.5												
10. Cephalic or length-breadth index.....	82.2	83.8	76.1 to 87												
12. Facial length.....	12.37	.....	10.5 to 14.4	.....	.....	.....	.....	.....	....	.....	....	.....	.....	....	From *n* to lowest point of chin.
13. Empirical greatest height.....	13.3	12.3	11.5 to 15	.....	.....	.....	.....	.....	....	.....	....	.....	.....	....	The empirical greatest height, *b β* is obtained by measuring the sides of the triangle *m β t*.
14. Dolichocephaly.....	.....	.....	70.0 to 74.9												
Meso-cephaly.....	.....	.....	75.0 to 79.9												
Brachy-cephaly.....	... ...	.....	80.0 to 84.9												
Eury-cephaly.....	.....	.....	over 100 to 150												

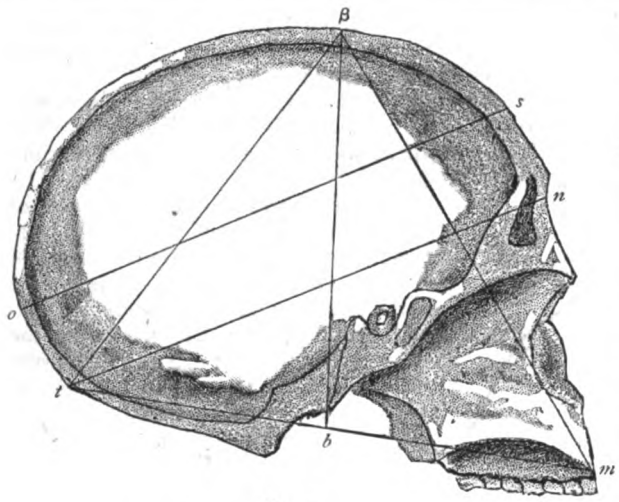

FIG. 7.

ments, and about two per cent., or 1 ctm., for total diameter measurements, the scalp being about 5 mm. (⅕ in.) thick.

Variations dependent upon age.—The proportions of the skull change most considerably in the first year, and continue to change up to the fourth year. After that modifications are slight in amount and appear more slowly. By the end of the seventh year the skull has nearly reached its full size (see Table), more nearly in girls than in boys. The chief measurements during childhood are given in the table. The protuberances and ridges are less marked in children.

The orbital index, *i.e.*, rates of height to width of orbit, undergoes great changes during growth. In young children it is 100, *i.e.*, the height and breadth are equal. In adults it is 84.6 (Weisbach), *i.e.*, the breadth is a fifth greater than the height. The naso-bregmatic arc is relatively smaller.

The sexual differences in skulls have been formulated by Broca. He shows that these differences are not absolute, some female skulls having a masculine type, and *vice versa*. The distinctions he lays down are not all of surgical importance. The bony ridges and protuberances are less marked, more particularly the glabella or nasal boss, which in many female skulls is absent.

The inion is also less prominent. Benedict states that there is a concave curve between the orbital borders just above the glabella in man, but not in woman.

The volume of the female skull is less than that of the male, as a rule; but this does not serve as any definite guide in distinguishing the two. The orbital index is greater in woman than in man (Weisbach). In adults the average is 84.6 (in Germans). In men, it is 82.5, in women, 87.8. In other words, women have relatively narrower orbits (Zuckerkandl), corresponding to smaller frontal lobes.

The posterior half of the naso-occipital arc is greater relatively in woman. The lambdo-occipital arc, indeed, is actually absolutely longer in woman. (Benedict's figures.[1] See table.) The cephalic index is greater in women (Germans), *i.e.*, their skulls are relatively broader. The empirical greatest height is relatively much lower in women; in other words women (Germans) have lower as well as broader skulls.

To sum up, the female skull is larger posteriorly, is broader, lower, with higher orbital diameter; often it has no glabella, no super-glabellar depression, and is less well marked as to its ridges, prominences, and sutures.

Variations as regards race.—The length-breadth index and other cranial indices, and the volume, are the only racial differences so far extensively studied. Even these are too indefinite factors to be of any practical value. In general we may say that the Dolichocephalic or long-headed,[2] are the English; Irish; Scandinavians; Negroes, 73; Arabs, 74; Chinese, 76.

The Brachycephalic, or broad-headed, are the Germans, 81; Russians; Turks, 81.

The Mesocephalic, or medium-shaped heads, are the American Indians, 79; Hollanders; Parisians, 79.

The variations dependent upon artificial deformities, accidents, perversions of growth and development, and upon disease.—There are certain individual, more or less pathological variations in the shape of the skull, due to a premature ossification of a suture, or arrest of development in a centre of ossification, or a hyperplasia, or aplasia of a part of the skull or of its contents. When one part is shut off from its natural expansion, other parts, as a rule, undergo compensatory development. This principle underlies the pathology of cranial deformities.

Those deformities which it would be well to look for before mapping out a skull are the:

1. Triangular, or trigonocephalic skull.
2. The keel-shaped or scaphocephalic skull.
3. The acrocephalic skull.
4. The oxycephalic or steeple-shaped skull.
5. The flat-headed skull.
6. The plagiocephalic or obliquely deformed skull.

Variations in the insane, criminal, epileptic, and other psychopathic classes generally.—Minimal measurements of the frontal arc (*n β*) are oftener found in insane and criminals.

[1] Other figures, such as those given by Krause, Anatomie, ii., p. 55, make the difference less, *e.g.*, male and female both measure 6.6.

[2] The figures are chiefly from Broca; and from Weisbach, in Krause's Anatomie, iii., p. 6, etc.

The parietal arc is also said to be often shorter in the insane, defective, and delinquent classes, and in epileptics.

In these classes, however, maximal excesses also often occur.

There is, as yet, no acknowledged special variation or type which is, of itself, an indication of a peculiar mental trait or specific pathological condition, although Lombroso and his followers have tried to make out such. On the whole, it is found that pronounced deformities occur often in healthy persons, while in psychopathic classes and

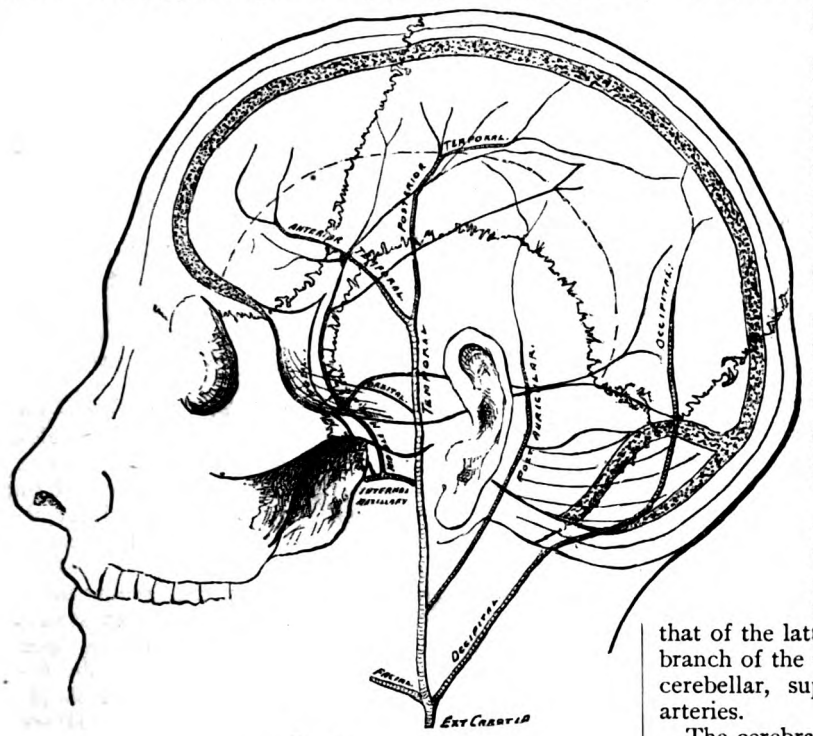

FIG. 3.

criminals there is a large proportion of slight variations, generally minimal, from the normal type.

The vascular supply of the scalp, skull, and brain.—The vascular supply of the scalp, skull, and dura mater comes from the external carotid; that of the eye, brain, and pia mater from the internal carotid and vertebral. The arrangement is shown here:

- External carotid
  - Occipital, inferior meningeal, arteries.
  - Posterior auricular.
  - Temporal
    - anterior.
    - middle.
    - posterior.
  - Ascending pharyngeal, posterior meningeal.
  - Internal maxillary, middle meningeal, small meningeal.
- Internal carotid
  - Anterior meningeal.
  - Anterior cerebral.
  - Middle cerebral.
  - Posterior communicating.
  - Anterior choroid.
- Vertebral
  - Posterior meningeal.
  - Inferior cerebellar.
- Basilar
  - Anterior cerebellar.
  - Superior cerebellar.
  - Posterior cerebral.

The general arrangement and distribution of the arteries of the scalp and dura is shown in the accompanying diagram (Fig. 3). The arterial supply of the scalp is very rich, but it all comes from below; consequently a tight elastic bandage tied around the head, in a measure, stops the circulation above, and sometimes enables the surgeon to operate bloodlessly.

The veins of the convexity of the scalp carry the blood down into the external jugular, except in the occipital region. The occipital vein general ends in the internal jugular.

The nerves of the scalp are the sensory branches of the fifth, viz., the supra-trochlear and supra-orbital, temporo-molar, lachrymal and auricular temporal, the great and small occipital, and great auricular branches of the cervical nerves.

There are motor fibres to the temporal muscle from the fifth, to the occipito-frontalis from the seventh, and from the cervical nerves. No especial harm occurs if any of these nerves are cut.

The blood-supply of the skull is furnished chiefly by the meningeal arteries of the dura mater. These all come, except the small anterior meningeal branches and a small posterior branch, from the external carotid. The blood passes into the diploic veins, and from there passes chiefly into the lower occipital and lateral sinuses. Some of it, however, returns in the venæ comites. It all returns down toward the base of the skull. The arteries are indicated in the table (see also Fig. 3).

The most important of these arteries is the middle meningeal, both on account of its size and its distribution over important functional areas. The position of this artery is shown in the figure. A large branch grooves the anterior inferior end of the parietal bone and passes up close to, but usually just posterior to, the coronal suture.

The blood-supply to the brain comes from the internal carotid and the vertebral arteries. The branches of the former artery give off the anterior middle cerebral, posterior communicating, and anterior choroid; that of the latter the inferior cerebellar, while the basilar branch of the vertebrals gives off the transverse, anterior cerebellar, superior cerebellar, and posterior cerebral arteries.

The cerebral arteries, anterior, middle, and posterior, are the three largest and most important.

From the circle of Willis and the beginnings of these arteries, several groups of vessels, six in all, are given off. They enter the base of the brain and supply the ganglia and adjacent white matter. They are called the central arteries, and they are the vessels usually affected in cerebral hemorrhages of adult life. They do not anastomose

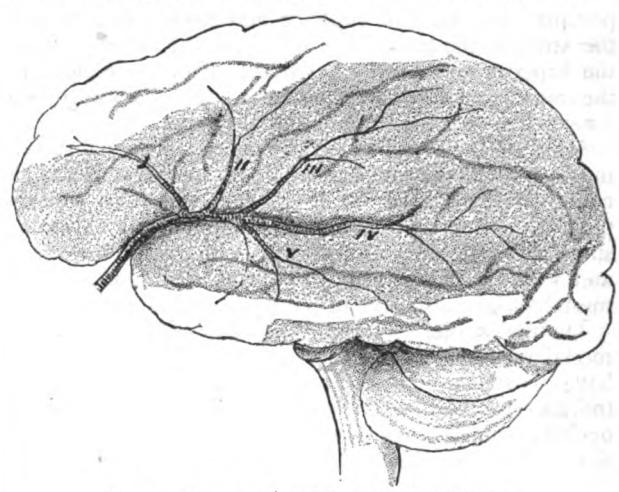

FIG. 4.—Sylvian Artery and Its Cortical Distribution.

with each other or with the cortical arteries. The cortical arteries anterior, middle, and posterior anastomose with each other but slightly. They are distributed very widely and carry much more blood than the central groups. Their distribution is shown in Fig. 3.[1]

The cortical arteries are distributed in the pia, and

[1] Nearly all systematic writers on cerebral anatomy seem to accept the investigations of Duret and Heubner regarding the vascular supply of the cortex as sufficient and complete.

from there they pass in two sets, a superficial and a deep, into the gray matter, and for a short distance into the white matter. They pass straight in at right angles to the surface. They have richly arborescent branches which do not anastomose; consequently, a knife plunged straight into the brain does not cut many vessels.

The blood of the convex and mesial cerebral surface, flowing up from the base, leaves the capillaries and enters veins. Thence it still passes upward, and for the most part enters the longitudinal sinus. The most of the vessels enter the posterior portion of the sinus and in a direction forward and upward, *i.e.*, against the current in the sinus.

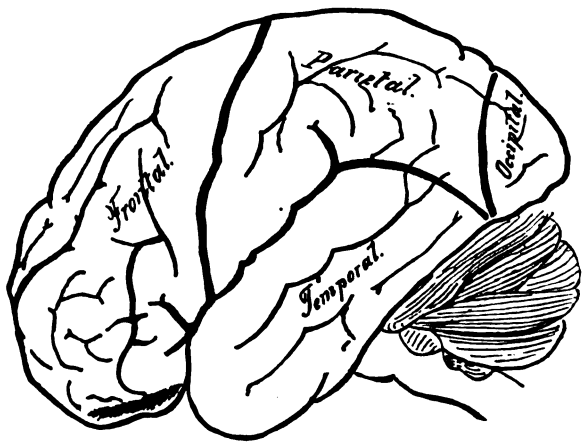

FIG. 5.—Lobes of the Cerebrum.

The course of the blood-current is, therefore, opposed both to gravitation and to the venous flow.

The veins of the cerebrum are: 1, the superficial cerebral; 2, the deep cerebral veins; and 3, the cerebral sinuses.

The superficial cerebral veins are venæ comites. Those on the convex and mesial surfaces empty chiefly into the superior longitudinal sinus, as described; those on the basal surface empty into the cavernous and lateral sinuses. These veins have no valves, and their walls are very thin and without muscular fibres. The deep cerebral veins, or venæ Galeni, receive the blood from the lateral ventricles and from some of the central arteries supplying the basal ganglia. They empty into the straight sinus.

The cerebral sinuses are fifteen in number. The important ones are the superior and inferior longitudinal, the straight, the lateral, the occipital, the cavernous, and the superior and inferior petrosal. They carry blood for the most part in a direction from before backward, and convey it eventually to the internal jugular.

Most of the blood of the convexity and mesial surface must pass into the longitudinal sinus, but there is a slight connection of some of the veins with the superior petrosal and straight sinuses. The superior longitudinal sinus also communicates slightly with veins of the scalp and with the facial vein. Some of the blood from the mesial surface also goes to the veins of Galen.

On the whole, however, the system of the convex and mesial cerebral surface is a close corporation, the blood having to pass into the superior longitudinal sinus and torcular Herophili, where it meets that of the straight and occipital sinuses, and flows forward through the lateral sinuses to the internal jugular. The circulation of the basal surface is less isolated. All the basal sinuses communicate with each other freely, and there are slight communications between the veins of the scalp and the cavernous, lateral, and inferior petrosal sinuses. *It would be safe, perhaps, to tie any of the sinuses,* except the lateral and the posterior part of the longitudinal.

None of the cerebral veins or sinuses have valves. The pressure in the internal carotid arteries is about 150 mm., that in the cerebral sinuses 70 to 80 mm. (Gerhardt), and that in the jugular veins is almost negative. Both arteries and veins are more delicate than the extracerebral vessels. The cerebellar veins, superior, inferior, and lateral, empty into the straight, the lateral, and superior petrosal sinuses.

Except its gray matter, the brain is not a very vascular organ, but this gray tissue ranks in richness of blood-supply with the lungs and liver. The amount of blood in the brain at any one time is only about one to two per cent. of the total blood in the circulation, or about four ounces (Ranke).

The diameter of the common carotids is 6.7 mm. (Thorne), that of the subclavians 6.2 mm., that of the internal carotids 4 mm., and that of the vertebrals 3.5 mm. (Gerhardt). The blood to the brain, therefore, has passages three-fifths as great as the total arterial area near the heart, and the blood enters these passages at a pressure (250 to 150) three-fifths as great as that in the vessels near the heart. In reality, therefore, the brain must get about three-eighths of the blood of the systemic circulation in a given period of time. The cerebral circulation is, therefore, a very rapid one.

It is sometimes important to estimate whether there is cerebral œdema or excessive serous effusion in the cranial cavities. Therefore it may be borne in mind that the cerebro-spinal fluid ranges in amount from two to five ounces. (Luschka, Cotiqua). In old age, it may reach the amount of eight ounces.

The lobes, fissures and convolutions of the brain.—For the purpose of completeness and convenience I give below a very brief enumeration and description of the lobes, primary fissures, and secondary fissures, or sulci, of the brain. The term fissure is sometimes reserved for the seven chief or primary clefts of the brain. The secondary fissures are called sulci.

Our present knowledge of this subject is the result of labors extending over half a century. The progress of its development has three periods, the empirical, the developmental, and the comparative anatomical. To the first belong the studies of Gall, Spurzheim, Burdach, Rolando, Arnold, Cruveilhier, Leuret, Valentin, Foville, and Huschka. But little satisfactory progress was made, however, until attention was turned to the study of fœtal and infants' brains, by Tiedemann and Reichert. Finally, our knowledge was completed by the comparative anatomical studies of Gratiolet, R. Wagner, Huxley, Marshall, Rollerton, Flower, Turner, Ecker, Wernicke, and others.

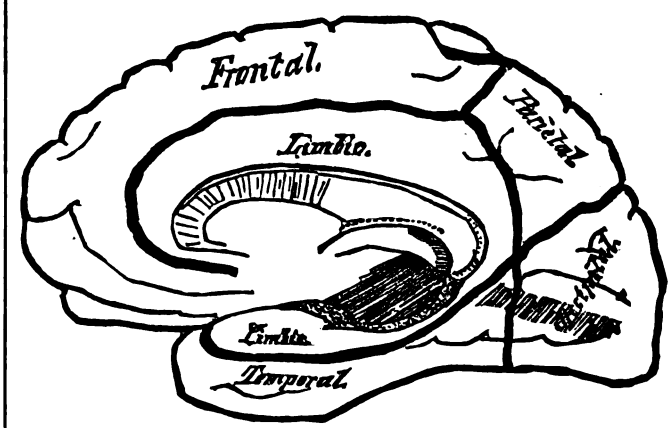

FIG. 6.

The primary or chief fissures of the brain are:

I. The longitudinal.
II. The transverse or choroidal.
III. The fissure of Rolando.
IV. The fissure of Sylvius
V. The parieto-occipital.
VI. The calcarine.
VII. The Bogen fissure, comprising the sulcus corporis collosi, and the sulcus hippocampus.

The secondary fissures, or sulci, will be enumerated in describing the lobes. These are divided into the typical or more or less constant, and the atypical or tertiary fissures.

The primary fissures divide the cerebrum into the following lobes:

I. Frontal.
II. Parietal.
III. Temporal.
IV. Occipital.
V. The central, or island of Reil.
VI. The gyrus fornicatus or limbic lobe.
VII. The olfactory.

The frontal lobe is limited behind by the fissure of Rolando, and on the median surface by the calloso-marginal fissure and its ascending branch. It has the following sulci: 1. Superior frontal and superior precentral. 2. Inferior frontal and inferior precentral. 3. Olfactory. 4. Tri-radiate.

These sulci form the following convolutions: 1. Anterior central or precentral, or ascending frontal, having on its median surface (a) the paracentral lobule. 2. First or superior frontal. 3. Second, or middle frontal. 4. Third, or inferior frontal. 5. The opercular gyrus or operculum at the foot of the fissure of Rolando. 6. The triangular, between the two anterior branches, if they exist, of the Sylvian fissure.

The parietal lobe is limited behind by the parieto-occipital and anterior occipital fissures, below on its outer surface by the Sylvian fissure and a line drawn back from its upper end to the lower part of the anterior occipital. In front it is limited by the fissure of Rolando. On its median surface it is limited in front by the ascending branch of the calloso-marginal fissure, behind by the parieto-occipital, and below by the subparietal fissure.

Its important sulci are: 1. The parietal or interparietal. 2. The post-central.

The convolutions formed are, on the convex surface: 1. The post-central, or ascending parietal. 2. The superior parietal lobule, having on its median surface (a) the quadrate lobule or præcuneus. 3. The inferior parietal lobule, which is composed of (a) the supra-marginal gyrus, (b) the angular gyrus.

These are variously described, but are best considered as the one (a), the supra-marginal, surrounding the posterior end of the fissure of Sylvius, the other (b), the angular, as beginning at the upper limit of the first temporal fissure and extending back as far as the anterior occipital fissure.

The occipital lobe.—This is limited on its convex or lateral surface, anteriorly, by the parieto-occipital fissure, below this by the anterior occipital fissure and inferior occipital fissure. These in apes form a single continuous fissure sharply separating the occipital from the other lobes. On its median surface the parieto-occipital fissure limits it in front. On the under surface the anterior edge of the tentorium about marks the anterior limit of the lobe.

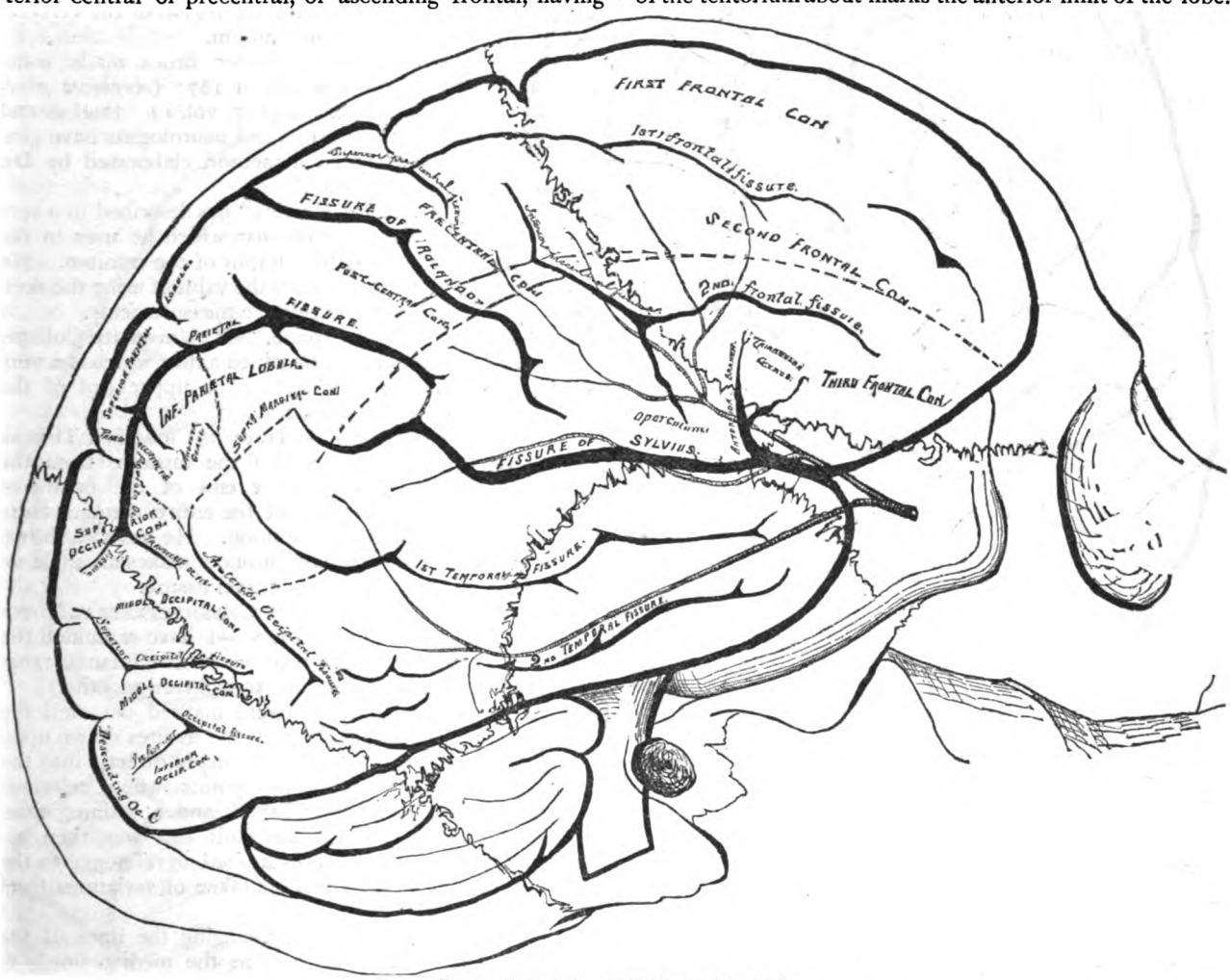

FIG. 7.—Convolutions and Fissures of the Brain.

The sulci are: 1. The transverse occipital (ape fissure of some writers). 2. The superior occipital. 3. The inferior occipital. On the median surface: 4. The calcarine, which joins the parieto-occipital. 5. The inferior occipito-temporal or fourth temporal.

The convolutions on the convex surface are: 1. The superior occipital. 2. The middle occipital. 3. The inferior occipital. 4. The descending occipital. On the median surface we find: 5. The cuneus. 6. Descending occipital.

The temporal lobe.—The convex or lateral surface shows the following sulci: 1. The first temporal or parallel sulcus. 2. The second or middle sulcus. On the under and median surfaces are: 3. The third or inferior temporal sulcus. 4. The fourth temporal or inferior occipito-temporal or collateral sulcus, which extends into the occipital lobe. 5. The hippocampal sulcus, which really belongs to the limbic lobe.

The convolutions are: 1. The first temporal convolu-

tion. 2. The second temporal convolution. 3. The third temporal convolution. 4. The lateral occipito-temporal, oral fusiform convolution. 5. The median occipito-temporal or lingual convolution. 6. The hippocampus convolution. 7. The uncinate convolution.

The island of Reil, or intermediate lobe (lobus centralis, lobus caudicis).—This has a circular sulcus surrounding it, and several more or less short vertical sulci dividing it into from five to seven short gyri.

The gyrus fornicatus or limbic lobe is made to include the gyrus fornicatus proper, or gyrus cinguli, the isthmus, the hippocampal gyrus, the uncinate and the dentate gyri.

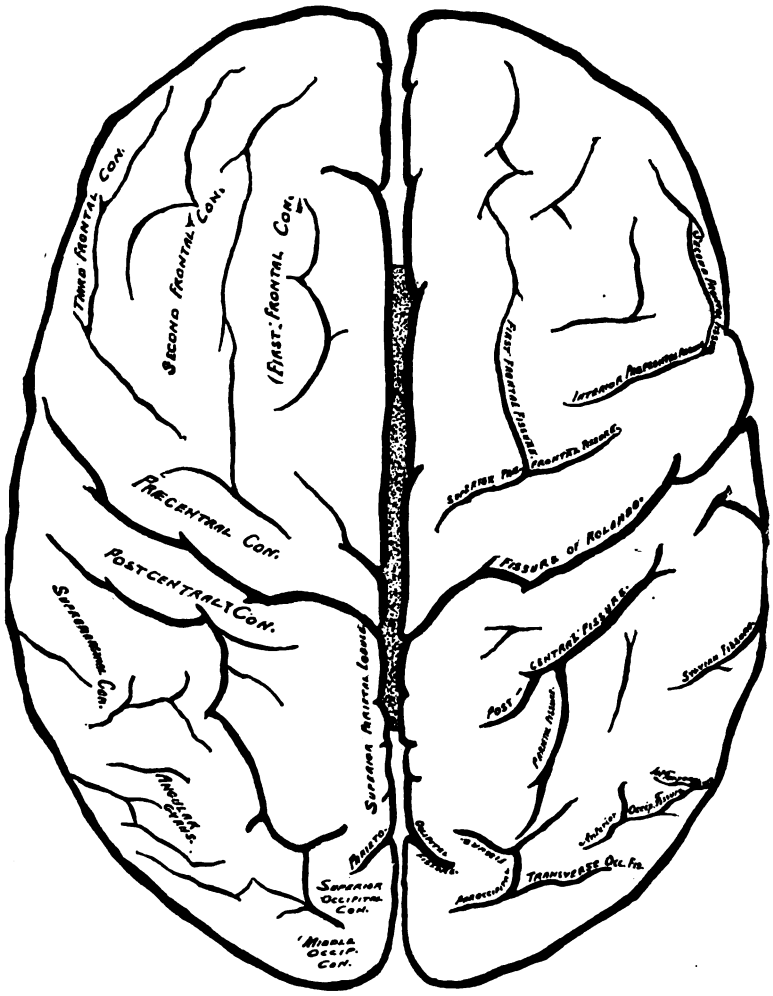

FIG. 8.—Convolutions and Fissures, Vertical Aspect.

The olfactory lobe.—The positions of these various lobes and gyri are shown on the accompanying diagrams, Figs. 5, 6, 7, 8, 9.

These diagrams are based on drawings made by myself of the fissures in the occipital and temporal regions of twenty cerebral hemispheres; on the photographs of brains in Dalton's work, together with a study of Ecker's and Wernicke's, and Wilder's descriptions. They differ from the regular Ecker diagrams in representing the par-occipital fissure as generally independent of the inter-parietal (I have never found them freely continuous), and in representing the anterior occipital fissure as described by Wernicke. This latter fissure is not always present, or at least easily made out; but it is to be found in the majority of brains, and often very typically. A shallow sulcus almost always connects it with the first temporal sulcus.

CRANIO-CEREBRAL TOPOGRAPHY. HISTORICAL.—Gratiolet,[1] in 1857, first undertook to examine into the relations of the cranial surface to the cerebral convolutions beneath. It led him to his classification of human races into the frontal, the parietal, and the occipital, but his observations upon the positions of the fissures were incorrect, and need not be referred to further.

In 1861, and again in 1877–78, Broca[2] made some further researches (Fig. 10). In 1868, Bischoff[3] contributed to the same subject. In 1872, Heftler[4] continued the work in a much more elaborate fashion (Fig. 11). A little later Turner,[4] of Edinburgh, published his contributions.

In 1875, Féré[5] contributed a most valuable and practical paper, giving results which we still use.

Fouillehouze[6] made some special studies of cranial topography in children and adults (Fig. 12).

Ecker,[7] in 1876, wrote a monograph upon this subject.

Lucas-Championnière,[8] in 1878, devised a scheme for locating the region of the cerebral fissures upon the cranium.

Pozzi, working under Broca, made some original observations in 1877 (*Archives générales de Médecine*, 1877, vol. i.). English and American surgeons and neurologists have generally accepted a method elaborated by Dr. Robert W. Reid.[9]

Mr. Victor Horsley[10] has described in a very careful manner the plan which he uses in determining the topography of the cranium. He has especially shown the value of using the skull landmarks and relative measurements.

Professor Thane,[11] of University College, London, has determined a rule, which is a very exact one, for locating the upper end of the fissure of Rolando.

Dr. Arthur W. Hare has modified Thane's rule by showing that the distance from the glabella to the upper end of the fissure of Rolando is 0.557 of the entire distance from the glabella to the inion. He has also shown that the fissure in question makes an angle of 67° with the longitudinal fissure.

OBSERVATIONS ON CRANIO-CEREBRAL TOPOGRAPHY IN CHILDREN.—I have examined the cranio-cerebral relations in five infants, ranging in age from one to eighteen months.

The landmarks were marked out, and the theoretical position of the fissures drawn upon the scalp. A hole was made directly into the brain at the various points whose relations were to be established, and a staining fluid injected. Half the skull cap was then removed, the points of injection studied in reference to the convolutions, and measurements taken of variations from the theoretical points.

The bregma was found by prolonging the lines of the coronal sutures until they met in the median line. It naturally lies close to the posterior edge of the anterior fontanelle.

My observations show that in children's brains:

1. The upper end of the fissure of Rolando is usually just at the theoretical point, but may be 1 to 2 ctm. in front of it. It was 30 ctm. behind the bregma in one case, 38 and 40 in two others. The lower end is just touched

[1] Anatomie comparée du Système nerveux, vol. ii., p. 115.

[1] Bulletin de la Société anatomique, 2me Série, t. vi., p. 340; et Revue d'Anthropologie, 1877–78–79.
[2] Die Grosshirnwindung des Menschen. Munich, 1868.
[3] Dist. inaug. de l'Académie Medico-chir. de St. Petersburg, 1872. Revue d'Anthropologie. t. v.
[4] Turner: Journal of Anat. and Phys., vol. viii, p. 142 and p. 360, 1874; Revue d'Anthropologie, 1881, p. 661; Journal de l'Anat., 1882 p. 515; Ibid., 1885.
[5] Féré: Bulletin de la Société anatomique, 1875, p. 828; Archives de Phys., 1876, p. 247.
[6] Thèse, 1876.
[7] Die Topographie Bez. zw. Schädel u. Gehirn, 1876.
[8] Sur la Trépanation du Crâne.
[9] British Medical Journal, September 27, 1884.
[10] Journal of American Medical Science, 1887, p. 350.
[11] Intracranial Tumors, by Dr. B. Bramwell, 1888, chapter xi.

by the stephanion-asterion line, as described later. It often runs nearly into the fissure of Sylvius. The direction is perhaps a little more vertical than in adults.

2. The fissure of Sylvius has its point of division a little higher than in adults. Its posterior branch lies either just under the squamous suture at its highest point (in two oldest cases), or above it ½ to 1 ctm. (3 cases). It runs up to and usually above and in front of the parietal boss, *i.e.*, the parietal boss is relatively lower than in adults. The length of the vertical branch is 1.5 to 2 ctm. Its direction up and slightly forward.

3. The parieto-occipital fissure is either exactly under the lambda (2 cases), or 1 to 2 ctm. in front of it (3 cases).

4. The transverse fissure was directly under the inion, hence the relations of the cerebellum are the same as in adults.

The two central convolutions together had an average width of 2.5 ctm. The precentral fissures were just posterior to the coronal suture, as in adults. The second frontal lay nearly under the frontal ridge. My measurements gave a larger naso-bregmatic arc than is usually given (see Table), and show the frontal lobes to be relatively large.

	Age.	Antero-post. diam.	Bi-par. diam.	Naso-occip. arc.	Naso-bregm. arc.	Naso-lamb. arc.	Greatest circumference.
I.	2 months.....	12.75	10.0	22.7	9.0	19.0	36.3
II.	1 month.....	....	....	22.3	9.8	....	....
III.	6 months.....	13.5	11.5	24.6	8.8	19.8	40.0
IV.	18 months.....	16.0	13.0	29.2	11.8	21.0	46.0
V.	8 months.....	....	....	27.3	11.5	....	....

Topographical Relations of Cranium and Convolutions.—For surgical purposes it is important to map out: The fissure of Rolando; the fissure of Sylvius; the parieto-occipital fissure; the transverse fissure, or rather the boundary between occipital lobe and the cerebellum; the precentral sulci; the inter-parietal fissure; the post-central sulci; the first and second temporal sulci.

The general principle which I have tried to follow in making out the rules for determining the cranio-cerebral relations is that of taking certain landmarks on the skull and determining the location of subjacent fissures by establishing their relation to these landmarks. The only fault to be found with the careful work of Heftler, Broca, Féré, Reid, and others, is that they used definite measurements from given points. This is shown to be incorrect by the wide range of distances given—as for example, the upper end of the fissure of Rolando ranges from 40 to even 60 ctm. behind the bregma. On the other hand, the *relative method* of finding this fissure, as given by Hare, is almost absolutely accurate for adult skulls of all normal sizes or shapes.

It is to-day an undisputed fact that every part of the cranial surface corresponds to a definite part of the cerebral surface. A high grade of atypical diminution in a certain part of the skull means that there is a corresponding aplasia of the brain below (Benedict).

While claiming for the relative method the merit of being more accurate and scientific, I do not deny that the absolute and numerical methods of Reid and Féré are not sufficiently accurate for most purposes. But as our knowledge of cerebral localization widens, we find it increasingly important to be able to map out smaller areas, and with the greatest certainty possible.

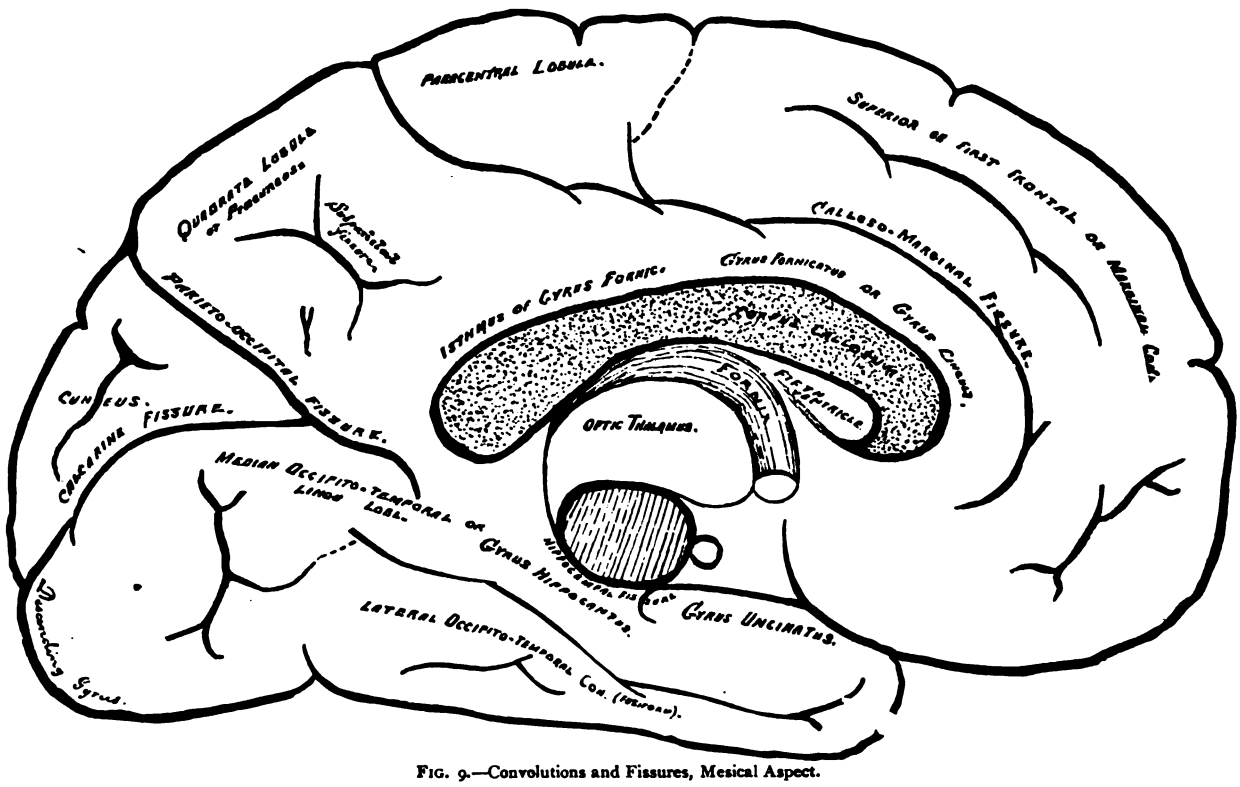

Fig. 9.—Convolutions and Fissures, Mesical Aspect.

The methods given below I have arranged in the form of rules. The rule gives the general and best guide in ordinary cases. If necessary, it may be supplemented or corroborated by applying other and numeral tests, as given by various investigators of the subject.

In the rules, it will be seen that that given for the fissure of Rolando is based upon the observations of Thane, Hare, and Horsley, with the addition of lines for determining the lower end of the fissure, which I have formulated from studies on skulls and tested upon the cadaver.

The various descriptions for finding the fissure of Sylvius are most discrepant; applying them upon a skull one gets several different points included in an area about an inch in diameter. Obviously, all are not accurate. I believe that the one which I have adopted, which is in the main like that of Horsley, is the safest.

Instruments of precision to aid in determining the location of the cerebral fissures have been devised by Broca, Lucas-Championnière, and others.

Broca devised a simple instrument which he called an "équerre" or square, to be used for determining the position of the auriculo-bregmatic line. It was simply a T-shaped arrangement of steel ribbons. At the junction of the two pieces was fastened a short wooden plug. The instrument was arranged so that the plug entered the external auditory meatus, and the anterior limb of the cross-

piece passed round just under the nostrils. The straight piece then passed over the head and just in front of the bregma (Lucas-Championnière) (see Fig. 13). M. L. Championnière cut out a square piece of cardboard so that it would fit over the head, each side passing over the auditory meatus. A straight piece of wood or a pencil is thrust through one side at exactly right angles to the plane of the cardboard. When the cardboard is arranged so that the pencil is on an exact level, the plane of the board passes through the bregma and is identical with the auriculo-bregmatic line (see Fig. 14).

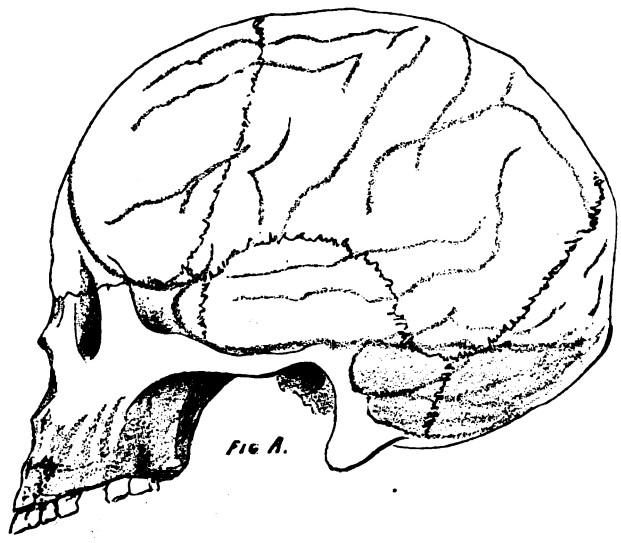

FIG. 10.—Broca's Diagram of Cranio-cerebral Relations in a Negro.

It is evident that such instruments are unnecessary when, as is almost always the case, the bregma can be felt with the finger.

Mr. Horsley devised an instrument of soft iron nickelized, ten inches long and one centimetre broad, from the middle of which branches off another strip one centimetre broad, the two making an angle of sixty-seven degrees. On the short arm is marked on both sides a scale of inches commencing half an inch from the middle line. The instrument is used thus: The long arm is laid on the middle line of the head, which has been previously marked; the angle between the arms is made to coincide with the theoretical situation (Thane) of the upper end of the fissure of Rolando; a line drawn down the anterior border of the short arm for a little over two inches gives the course of the upper two-thirds of the fissure of Rolando.

Mr. Hare ("Intra-cranial Tumors," loc. cit.) describes an instrument which he calls Wilson's cyrtometer, and which allows one to apply still more readily his relative method for finding the position of the fissure of Rolando.

It consists of three strips of nickel-plated soft iron, with a tape or clamp for securing them in position. The broadest, transverse strip is applied circumferentially around the head, embracing the glabella, external angular process, and external occipital protuberance, and is firmly secured in place. A narrower longitudinal strip of metal, attached to the first strip at right angles, passes backward in the middle line over the scalp to the occipital protuberance. This strip is marked with two series of letters, capitals near the occipital end, small letters about the middle of the strip. These two series of letters are related to one another, each to each as 0.557 is to unity measured from the frontal end of the strip. Hence, when any given capital letter falls on the occipital protuberance, the corresponding small letter points out the upper limit of the fissure of Rolando. A third narrow reversible strip glides forward or backward on the longitudinal strip, and marks an angle of sixty-seven degrees opening forward, thus giving the course of the fissure.

Instead of using letters, I have had an instrument made on which various distances, measured from the frontal end of the longitudinal strip, have been marked. These distances range from 28 to 38 ctm., the ordinary range of the naso-occipital arc. In the middle of the strip the same figures are marked, each one representing 0.557 of the naso-occipital measurement.

In addition, I have had added a clip of steel which slips along the under edge of the broad or horizontal strip. To the lower edge of this is pivoted a narrow strip of metal. The clip is placed so that the frontal end of the movable strip lies over the external angular process. The strip is then fastened upon the scalp so that its lower edge just passes through the squamous suture. A line drawn along the upper edge shows the position of the horizontal part of the fissure of Sylvius.

The instruments of precision described are convenient, but nothing more than two strips placed at an angle of sixty-seven degrees is absolutely necessary.

RULES OF CRANIO-CEREBRAL TOPOGRAPHY.—*Rule* I. *The longitudinal fissure.*—This corresponds with the naso-occipital arc.

Rule II. *The fissure of Rolando:* (*a*) The upper end. Use the cyrtometer as directed, or measure the distance from the glabella to the inion. Find 55.7 per cent. of this distance, and the figures obtained will indicate the distance of the upper end of the fissure of Rolando from the glabella. As the naso-occipital arc ranges from 28 to 38 ctm. (11 to 15 inches), the point sought for lies from 15.7 to 26.8 ctm. from the glabella.

(*b*) The course of the fissure. Starting from the upper end of the fissure, lay off with the cyrtometer a line forming an angle of sixty-seven degrees anteriorly with the longitudinal fissure. This gives the direction of the upper two-thirds of the fissure, or for about 5.6 ctm. (2¼ inches). The lower third, about 2.1 ctm., is slightly more vertical. The bend of the fissure is about on a level with the anterior end of the parietal fissure. The total length of the fissure averages 8.5 ctm. (3⅜ inches).

(*c*) To find the lower end more exactly, if needed: Lay off a line from the stephanion to the asterion, and another from the bregma to the external auditory meatus. The point of intersection will be just over the lower end of the fissure. It should be about 1 ctm. above the fissure of Sylvius. The asterion is usually easily felt just behind the upper part of the mastoid process.

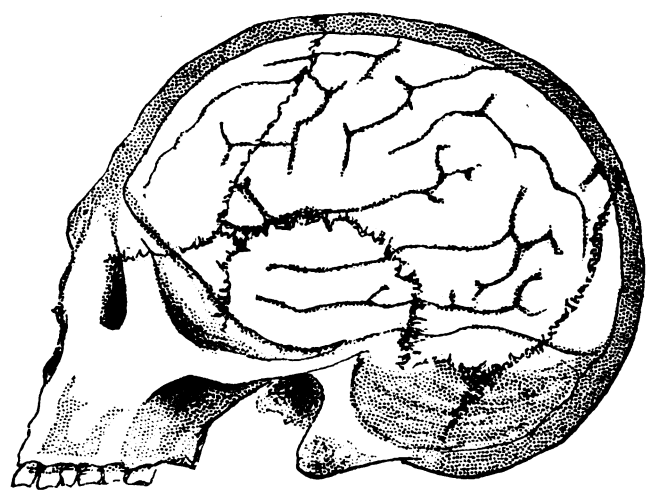

FIG. 11.—Heftler's Diagram of Cranio-cerebral Relations.

Supplementary.—The upper end of the fissure is 48 mm. back of bregma in men; 45 mm. in women (Broca, Féré). In French skulls Lucas-Championnière makes it 55 mm. It is about two inches (50 mm.) behind the bregma (Turner) in Scotch skulls. It is 48 mm. behind the bregma (Heftler) in Russian skulls. It is 38 mm. behind the bregma in adult men (Ecker) German skulls. The range is thus from 38 to 55 mm., or about 20 mm. The lower end is 28 mm. behind the coronal suture (Heftler, Russian skulls); it is 17 mm. in German skulls (Ecker). It is 25–30 mm. in French skulls (Fouillehouze, Féré, and Broca), where it

reaches to within 1 ctm. of the fissure of Sylvius. The range is therefore from 25 to 30 mm.

Physiological variations.—In imbeciles with arrested development of the fore brain the upper end is nearer the bregma, being from 30 to 32 ctm. behind it (Féré). The lower end is not changed. In persons with persistence of the medio-frontal suture, the growth of the posterior lobes pushes the fissure forward.

In children.—The (Fouillehouze) upper end of the fissure is in the first months of life from 30 to 35 ctm. behind the bregma, the antero-posterior diameter of the brain being 113.50 mm. At the second and third year of life it is 42.33 behind the bregma, and after this it rapidly assumes the same relations as in the adult. The lower end of the fissure is higher proportionately up to the third year, then it falls to the adult relations.

It will thus be seen that the fissure of Rolando is further back and higher up proportionately in children (see Fig. 16).

This corresponds with my measurements (*vide ante*), except that in some cases with a short naso-bregmatic arc the fissure is a little in front of the theoretical position. As a rule, in children the surgeon will find the upper end of the fissure of Rolando either at or a little in front of the theoretical position.

Rule III. *To find the fissure of Sylvius.*—Draw a vertical line from the stephanion to the middle of the zygoma. Draw a horizontal line from the external angular process to the highest part of the squamous suture; continue this back, gradually curving it up till it reaches the parietal eminence. The junction of the two lines will be at the beginning of the fissure of Sylvius. The vertical line indicates nearly the position of the anterior or vertical branch of the fissure, which is, however, directed a little more forward, and is about 2.5 ctm. (1 inch) in length. The posterior part of the line indicates the position of the posterior branch of the fissure. The triangular gyrus and motor speech centre lies just anterior to the vertical branch of the fissure. The operculum lies just back of it. The tip of the temporal lobe reaches nearly as far forward as the posterior edge of the orbital process of the malar bone. The fissure of Sylvius is separated from the lower end of the precentral sulcus by a convolution one ctm. wide on the average (Horsley).[1]

Supplementary.—Reid's method of finding the fissure of Sylvius is to "draw a line from a point 1¼ inch behind the external angular process to a point ¾ inch below the parietal eminence. The ascending branch starts from a point ¾ inch back from the anterior end of this line, and 2 inches (5 ctm.) back of the external angular process.

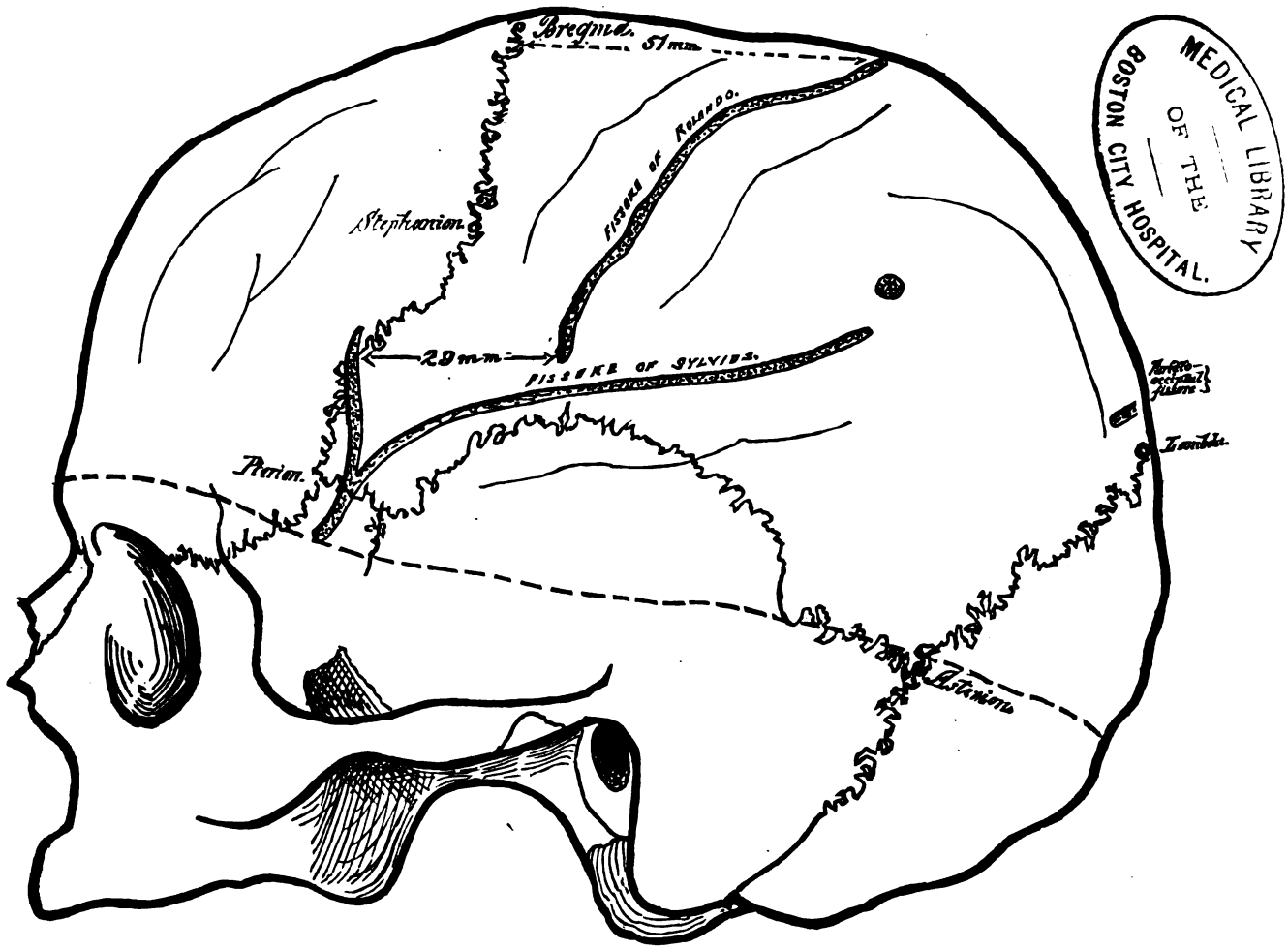

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FIG. 12.—Fouillehouze's Diagram of Cranio-cerebral Relations in Adult.

Dr. Hare draws a line from the external orbital process to the inion. A line from a point 1⅛ inch behind the anterior end of this line is taken, and a straight line from here to the parietal eminence marks the course of the posterior or main branch of the fissure of Sylvius.

Pozzi describes the fissure as beginning 5 mm. behind the anterior point of the pterion and passing just above the parieto-squamous suture.

Fouillehouze gives the same relations as Pozzi.

Turner found that the fissure began behind the posterior border of the lesser wing of the sphenoid.

[1] The above rules correspond to the anatomical fact upon which all observers agree, that the division of the fissure of Sylvius lies under the pterion. In twelve skulls upon which I have determined these lines the horizontal line passed through the external angular process, posterior point of pterion, and parieto-squamous suture and lambda in every case. The vertical line is not so constant, but in nine out of twelve cases it passed through the pterion; in the remaining three cases it fell just behind the pterion, but in these cases also, the pterion was further forward than in the average of cases. So that the vertical line, as Mr. Horsley points out, is a safe guide. The average distance of the posterior point of the pterion from the summit of the external angular process, I found to be about 4.5 ctm., ranging from 3 to 5.8 ctm. The distance is, however, quite a constant one.

Féré describes the fissure as beginning 22 to 25 mm. in front of the auriculo-bregmatic line, on a horizontal plane going through the external orbital process, parallel to the alveolo-condyloid plane.

Heftler describes the fissure of Sylvius as dividing 13 mm. behind the coronal suture, and just under the posterior point of the pterion (see Heftler's Fig.)

Horsley, as I understand his description, finds the beginning of the fissure at the pterion, and the pterion is

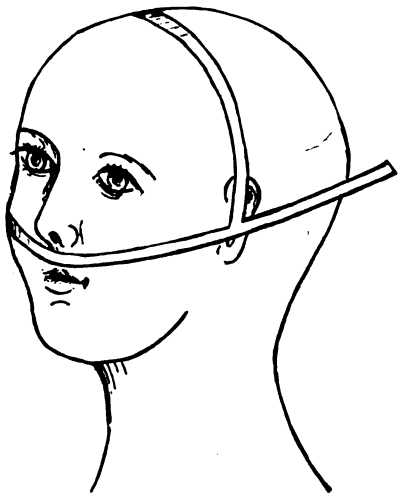

FIG. 13.—Broca's *Equerre.*

found by dropping a vertical from the stephanion to the middle of the zygoma. The pterion is just above the middle point of this line. I do not find the pterion always at this point, but it does mark the point of division of the fissure pretty accurately, and hence this line is adopted in my rule.

Broca describes the fissure as running just below the squamous suture. But most authorities agree that it lies under or just above it (1 mm., Horsley).[1]

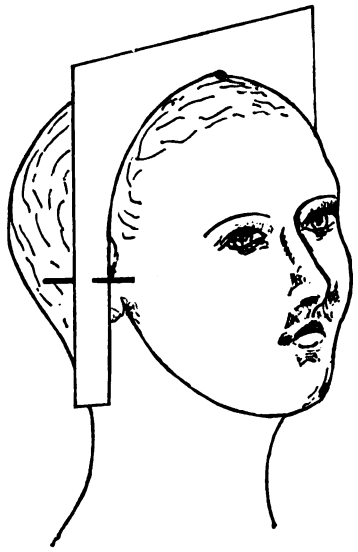

FIG. 14.—Lucas-Championnière's Instrument for Determining Bregma, etc.

Physiological variations.—In children, up to the third or fourth year, the fissure is more oblique and lies further above the squamous suture, an average of 12 mm., viz., 8 to 17 mm. (Fouillehouze) (see Fig. 13).

I have not found the variations so marked. In some young children the fissure lies just under the squamous suture as in adults; usually it is a little above it.

Rule IV. *To find the parieto-occipital fissure.*—Find the lambda, mark a point 3 mm. anterior to it, draw a line through this at right angles to the longitudinal fissure, extending about 2.25 ctm. (1 inch) on each side of the median line. If the lambda cannot be felt, its position may be found by measuring the naso-occipital arc, and taking 22.8 per cent. of it. This indicates the distance of the lambda from the inion or external occipital protuberance.[1] The average distance in male adults is 7.42 ctm. It is greater in women, by a little over a millimetre, than in men.

Supplementary.—The position of the parieto-occipital fissure is subject to considerable variations. Heftler found it just at the lambda on the average. Ecker figures it several millimetres anterior to the lambda. Fouillehouze places it from 5 to 21 mm. in front of the lambda. Féré found the fissure under the lambda in 39 out of 62 cases, and from 1 to 4 mm. above in 24 cases (mostly old women). Turner thought the fissure always in front of the lambda for from 0.7 to 0.8 inch. Broca asserts that it may be from 1 to 4 mm. in front or behind it; on an average it is just beneath it. Reid finds the fissure by con-

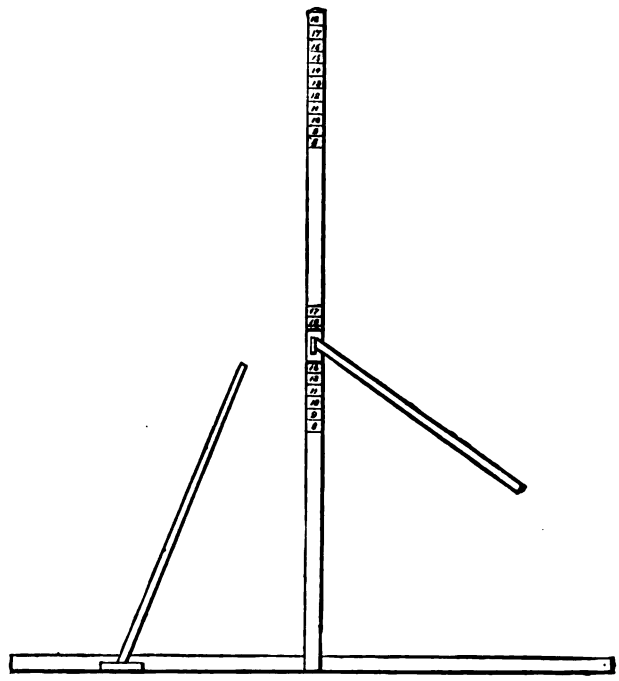

FIG. 15.—The Cyrtometer.

tinuing a line from a point 1¼ inch behind the external angular process of the frontal bone to a point ¾ of an inch below the most prominent part of the parietal eminence. This places the fissure considerably in front of the lambda. Horsley states that the fissure is usually 2 or 3 mm. in front of the lambda. Hare states that the fissure is two inches behind the upper end of the fissure of Rolando, and from ¼ to ½ inch above the lambda.

Physiological variations.—In children, up to the third year, according to Fouillehouze, the fissure is from 5 to 21 or 31 mm. in front of the lambda. I have found it from 15 to 20 mm. in front usually, but it may be directly under it even in small infants. The general results of observations are, therefore, that the parieto-occipital fissure lies a little in front of the lambda in adults; rather further in front proportionately in young children.

Rule VI. *To find the interparietal sulcus.*—First mark out the lines for the fissure of Rolando, fissure of Sylvius, and parieto-occipital fissure, and mark the position of the parietal eminence. Find a point on a level with the bend of the fissure of Rolando, and about 2 ctm. behind it. From this draw a curved line up and back, keeping it half-way between the fissure of Rolando and parietal eminence as it ascends, and half-way between the parietal eminence and longitudinal fissure as it passes back. Continue the line back till it reaches a point just outside the external end of the parieto-occipital fissure. This fissure

[1] The diagrams given by Broca, Heftler, and Fouillehouze, to show the relations of the cranial to the cerebral surfaces, are shown in Figs. 10, 11, 12.

[1] From calculations based on Benedict's measurements of skulls.

divides the parietal lobe into a superior and inferior lobule. The parietal eminence lies over or a little behind the supra-marginal gyrus, and about over the middle of the inferior parietal lobule.

Supplementary.—Reid places the anterior end of this fissure about one inch above and behind the angle formed by the fissures of Rolando and Sylvius. As the fissure is continued up, it is at first about ¾ of an inch behind

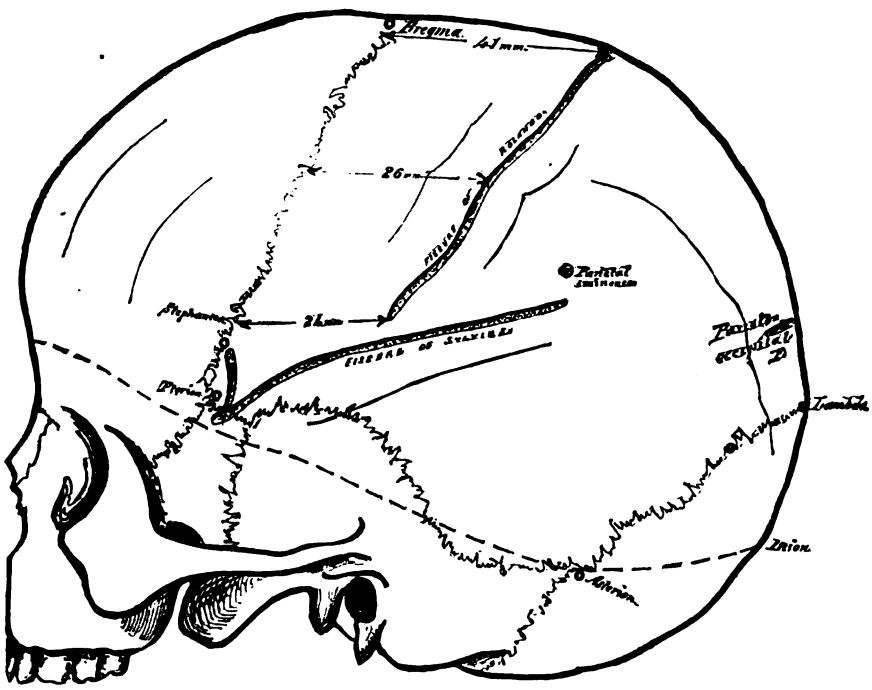

FIG. 16.—Fouilleho:ize's Diagram of the Cranio-cerebral Relations in Children.

the fissure of Rolando. The posterior part lies about ½ inch outside the parieto-occipital fissure. Heftler states that the interparietal fissure begins 15 to 20 mm. behind the fissure of Rolando. This fissure is very variable and irregular in its course. Hare states that the parietal fissure begins opposite the middle third of the fissure of Rolando and one inch behind it. It ascends for about an inch, and then turns back toward the outer end of the parieto-occipital.

Rule VII. *To find the inferior precentral or vertical sulcus, and the inferior frontal and superior frontal sulci.*—The inferior precentral or vertical sulcus passes nearly vertically just posterior to the coronal suture. Its lower end is 1 ctm. above the Sylvian fissure (Horsley), and 2 mm. behind the coronal suture. Its upper end reaches to the level of the mid-point of the fissure of Rolando, and is 4 mm. behind the coronal suture. It lies 2 to 2.5 ctm. anterior to the fissure of Rolando.

The inferior, or second, frontal sulcus passes forward from the precentral sulcus at a point a little above the stephanion. It continues forward in a line nearly identical with the frontal part of the temporal ridge (Reid).

The superior, or first, frontal sulcus begins at a point half-way between the fissure of Rolando and a line prolonged up from the inferior precentral sulcus (Horsley). This point should be from 2 to 2.5 ctm. in front of the fissure of Rolando. The fissure passes forward parallel to the longitudinal fissure, and its line, if prolonged, ends in the supra-orbital notch (Reid).

Supplementary.—The frontal convolutions, according to Turner, reach from 1.2 to 1.3 inch behind the coronal suture.

The first frontal convolution passes under the frontal protuberance, according to Pozzi.

The anterior end of the frontal lobes reaches to a point determined by the thickness of the frontal bone. This ranges from 2 to 8 or more mm.

The floor of the anterior fossa reaches in front to a level a little above the supra-orbital margin (16 mm., Heftler). It slopes down and backward, its posterior limit being indicated by the lower end of the coronal suture.

Rule VIII. *To find the temporal lobe and the first and second temporal sulci.*—The temporal lobe is limited above by the fissure of Sylvius, below by the contour line of the lower border of the cerebrum. This corresponds to a line drawn from a point slightly (about 12 mm.) above the zygoma and the external auditory meatus to the asterion, and continued on along the superior occipital curve to the inion. The anterior border of the lobe corresponds to the posterior border of the orbital process of the malar bone. The posterior border of the temporal lobe is somewhat arbitrarily found by drawing a line from the Sylvian fissure line at a point 2.5 ctm. below the parietal eminence, backward and downward to the anterior occipital fissure.

The temporal lobe is about 4 ctm. (1⅝ inch) wide at the external auditory meatus. A trephine, as Bergmann states, placed half an inch above the meatus would enter the lower part of the lobe. The middle of the lobe is in a vertical line from the posterior border of the mastoid process. A line from the upper end of the fissure of Rolando to the point of the process would pass through this important sensory area.

To find the first temporal fissure, draw a line 2.5 ctm. below and parallel to the Sylvian fissure (Reid). The second temporal fissure is about 2 ctm. below the first (Reid).

Rule IX. *To find the occipital lobe and anterior occipital fissure.*—The upper anterior border lies under a line drawn from just above the lambda (1 to 2 mm.), curving out and down to a point about at the junction of the anterior and middle third of the line from the inion to the asterion. The lower border corresponds pretty closely to the superior occipital curved line. The anterior occipital

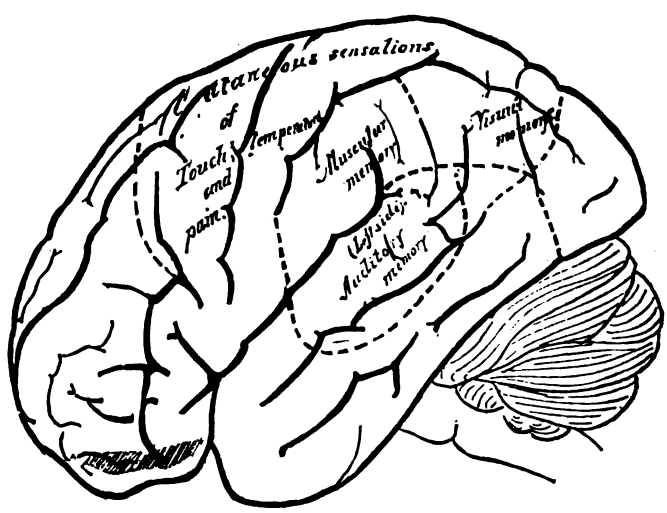

FIG. 17.—Sensory Cortical Localizations.

sulcus, when present, should lie in the anterior border of the lobe.

Rule X. *To find the position of the central ganglia*, viz., corpus striatum and optic thalamus, draw a line from the upper end of the fissure of Rolando to the asterion, practically a vertical line. This limits the optic thalamus posteriorly. A vertical line parallel to the first, a little in front of the beginning of the fissure of Sylvius, limits the corpus striatum anteriorly. A horizontal plane 45 mm.

below the surface of the scalp at the bregma, limits the ganglia superiorly. The ganglia lies about 35 ctm. below the superior convex surface of the brain (Féré).

Rule XI. *To avoid the meningeal arteries and central sinuses.*—The course of the middle meningeal artery has been described and is seen in Fig. 3. This artery is the only one of importance or very definite course. The superior longitudinal sinus generally (not always) lies a little to the left of the median line. The torcular Herophili lies approximately under the inion. The lateral sinus lies generally about under a line from the inion to the asterion, and just grooves the postero-inferior angle of the parietal bone.

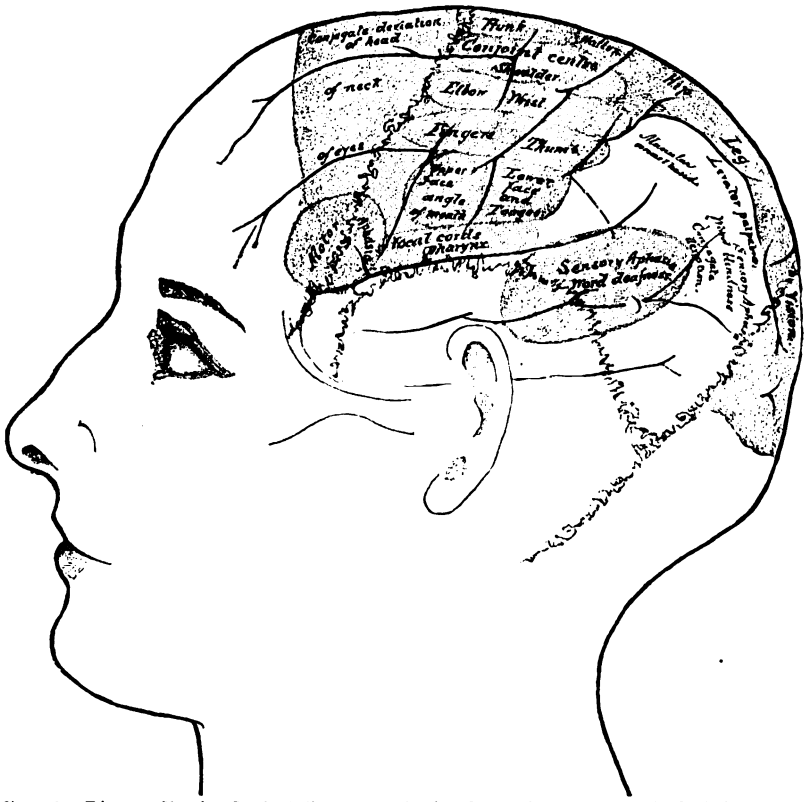

FIG. 18.—Diagram Showing Cerebral Fissures and Cortical Centres Mapped out on the Scalp in Accordance with Rules of Cranio-cerebral Topography.

Rule XII. *To outline the base of the brain.*—The rules for this are given in Rules VII., VIII., and IX., for finding the frontal, temporal, and occipital lobes.

LOCALIZATION OF THE CEREBRAL FUNCTIONS.—So much has been written upon this subject recently, that I do not propose to enter upon it now. The articles of Horsley, of Leyden, and Jastrowitz, of Roswell Park, Dr. C. K. Mills, Dr. M. Allen Starr, and Drs. E. C. Seguin and R. F. Weir cover the subject of our knowledge up to the present date. I may be permitted to refer, perhaps, to a contribution made by myself to the localization of the cutaneous sensory functions in the *Journal of Nervous and Mental Diseases* for November, 1888.

In Figs. 17 and 18 will be found representations of the functions of the cortex.

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THE DANGER OF PRACTISING MEDICINE.—The recent death in Georgia of Dr. J. B. Manson, one of the most eminent, skilful, and benevolent physicians of that State, at the hands of an infuriated father whose child died from typhoid fever while under the care of Dr. Manson, draws attention to one of the many dangers which surround a doctor. Ill-balanced minds under the pressure of great grief often unjustly blame the attending physician for the death of their loved one; but, fortunately, it is rare for the result to be so sad as the one above referred to.—*The Weekly Medical Review.*

LAPAROTOMY AND NEPHRORRHAPHY.

BY JOSEPH D. BRYANT, M.D.,

NEW YORK.

L. H. W——, aged twenty-eight, clerk; single; temperate; family history good. W—— has suffered for a long time from dyspepsia. Had chills and fever some years ago. He left school at eleven years of age and went to hard work. About seven years ago, while at work, felt a peculiar sensation in the right lumbar region attended with fatigue. Had severe constipation and loss of appetite at this time. In the evening of the same day there was noticed marked tenderness at the seat of the pain; felt chilly and suffered from nausea. Pain rapidly became so severe that walking caused great suffering, and patient could not stand erect; it also prevented him from sleeping. These symptoms continued for two days, with diminishing severity. At the end of this time he felt quite well again, and the bowels resumed the normal function. About three months after this time a similar attack occurred, and thereafter, at intervals of one, two, or three months, the attack was repeated. The attacks usually began in the afternoon, and by evening he was obliged to take to bed. The later attacks were attended by severer nausea, by vomiting and retching. The vomited matter was usually of a bitter taste and of a yellowish color. The constipation, too, became more obstinate, and the stools were small in size and quantity. He says they resembled a pencil in shape and size. Mucous discharges from the bowels often attended the attacks. The urinary secretion was usual in all respects, so far as he was able to determine. The attacks at this time varied in length somewhat; they lasted from one day and a night to three or four days and nights continuously, during which time no solid food could be retained by the stomach without severe distress in the right lumbar region. Strong purgatives on these occasions failed to produce the usual effect. During the later attacks he suffered much from distention of the lower portion of the abdomen; the degree of the distention increased with the repetitions of the attacks.

After suffering for a year or so he consulted many physicians and surgeons regarding the nature of his trouble, but was greatly discouraged by the differences of opinions expressed, and by the increase in the frequency and severity of the attacks.

In February, 1887, he consulted Dr. Janeway, who diagnosticated partial obstruction of the colon, complicated with floating kidney of the same side (right).

Some months later he complimented me with a call, having begun again his tireless search for someone who could tell him the cause of his trouble, and would promise him relief At that time he had a tender, somewhat painful movable tumor in the right lumbar region, attended with abdominal distention. At the first examination I ventured the opinion that there was a limited obstruction of the ascending colon, but whether or not the tumor was a complication or the result of it I was unwilling to say until I could examine him when in his best condition. I advised him to call and see me then, and also to see Dr. Janeway in the meantime. He then informed me for the first time that he had already seen Dr. Janeway, and also many others in this city and in Brooklyn. At subsequent examinations it was easy to determine that the tumor first noticed was a floating kidney.

Laparotomy was proposed, to relieve the colon of the constriction, but owing to strong family objections it was

not performed until February 29, 1888, about eight months from the time I first saw him. Dr. Janeway, Dr. Dennis, and other physicians, whose names I do not now recall, were present at the operation. The family physician, too, Dr. —— was there. Before the operation was begun Dr. —— remarked that the patient was treated by him some three or four years before for what he believed to have been an acute attack of circumscribed peritonitis, located at the right side of the abdomen. The importance of this statement is obvious.

There is but little to be said of the operation itself. At the time of the operation the patient had recovered completely from the last attack.

The incision was made through the right linea semilunaris into the abdominal cavity. It was about five inches in length when fully extended, readily exposed the ascending colon, and disclosed the following conditions:

1. The hepatic flexure and the upper half of the ascending colon were bound to the parietal layer of the peritoneum, just outside of the line of incision.

2. Three fibrous bands were found passing nearly transversely across the intestine at its upper half, below the flexure. One of these bands was about one-fourth of an inch in width and caused a reduction in the lumen of the gut equal to about one-fourth of its diameter. The remaining two were narrower, ran more obliquely, and produced less constriction of the intestine. The right border of the omentum was adherent, at this situation, to a limited extent.

The bands were divided and removed, after ligaturing with catgut. The adhesions between the intestines and the abdominal wall were torn asunder with care, but without difficulty. A freely movable kidney was felt, though then lying in nearly the normal position. The caput coli and transverse colon were examined, but the examination disclosed nothing abnormal in connection with them. An unusually looped appearance of a limited portion of the small intestine was noticed just outside of the incision. The wound was closed, drained superficially, and dressed antiseptically. The patient made a continuous and complete recovery from the operation without an unfavorable incident.

Until the first week in May the patient considered that the operation had relieved him of his entire trouble. At this time the kidney became much enlarged, tender, and painful, and caused some pain when walking; it was pressing against the abdominal wall in contiguity with the lower half of the ascending colon.

In the course of three weeks the patient was apparently well again. The kidney, however, continued its peregrinations, especially with efforts of the patient while in the erect posture. During these and subsequent attacks the patient suffered from nervousness, debility, frequent nausea, loss of appetite and flesh, and occasional diarrhœa. The attacks were repeated, with varying intensity, once in three or four weeks. The following symptoms, however, that had been often present before the laparotomy did not again present themselves: 1, Vomiting; 2, abdominal distention; 3, unusual constipation; 4, mucous discharges from the bowels; (5) fæces not abnormal in shape nor in consistency.

After two or three months' suffering the patient entertained the proposition already made to "anchor the kidney," and finally consented to it, and on November 28, 1888, this operation was performed. A vertical incision was made just outside of the erector spinæ muscle, on the right side, from the lower border of the last rib, midway between its extremities, downward nearly to the crest of the ilium. The outer border of the quadratus lumborum was exposed without difficulty. The anterior surface of this muscle then served as a guide to the location of the kidney, which could not be felt at this time, even when firm pressure upon it was made in front. The anterior layer of the lumbar aponeurosis was then divided in a vertical direction. The kidney could then be felt with deep pressure, aided by counter-pressure. The transversalis fascia was then divided vertically to a similar extent. The kidney could then be easily felt as it moved upward and downward with each respiratory act. It could not be seen on account of its fatty surroundings. Firm pressure in front now forced the kidney against the open wound, along with its fatty capsule. This capsule was easily and quickly torn through, bringing the kidney fully into view. The divided edges of the capsule were grasped with the fingers and drawn through the wound with abdominal pressure, and about three inches of the capsule were removed from each side. The kidney was now pushed into the wound by gentle pressure, and the borders of the capsule were then drawn taut, turned over the edges of the entire external wound, and sewed firmly to it with carbolized silk carried through the entire depth of the lumbar tissues. This measure confined the kidney in the wound, but did not control entirely the movements of the kidney caused by the act of breathing. However, gentle pressure downward and backward on the kidney, from in front, readily confined the organ quietly in position. I should add that a stitch had been passed through the fibrous capsule of the organ before this had been quickly torn out through the fibrous capsule by the movements of the kidney. After the final sewing of the capsule the wound had about the following dimensions: Length, four inches, at the bottom; width, three-quarters of an inch. The bottom of the wound was composed entirely of kidney, covered by the fibrous capsule. The wound was then drained and packed with iodoform gauze, covered lightly with sublimate gauze, a counter-pressure pad applied over the kidney in front, and the whole confined in position with adhesive strips and bandages.

The patient made a rapid and continuous recovery without the intervention of an unfavorable symptom, and has promised to be present to-night for your inspection. Since the operation he has had no return of the old trouble, and has experienced no unusual sensations other than an occasional burning sensation at the seat of the kidney, and an indefinite sense of drawing, which I believe due to the contraction of the liberal cicatrix, upon which reliance is placed to retain the kidney in the new position, aided by the shortened and tense fatty capsule that nearly surrounds it.

SECONDARY SUTURE OF THE POSTERIOR TIBIAL NERVE WITH RAPID RESTORATION OF SENSATION AND MOTION.

By LAUGHLIN McFARLANE, M.D.,

PROFESSOR OF CLINICAL SURGERY, TORONTO UNIVERSITY, AND SURGEON TO THE TORONTO GENERAL HOSPITAL.

The history of nerve-suturing dates back for at least half a century, and well do I remember twenty-five years ago, when the late Dr. Beaumont primarily sutured the musculo-spiral nerve after its accidental division, while operating for non-union of a fracture of the humerus. The practice, however, seems to have fallen into disuse for many years. This, no doubt, was due to the very indifferent success of the operation. We can get little or no information on the subject in our ordinary text books. No doubt in the early times of the operation, the want of success was very often due to the mode of healing of the wound. In place of primary union it more commonly healed by a secondary effort of granulation with suppuration, and consequently the sutured ends of the nerve were held and firmly bound down by cicatricial tissue. Probably the suture holding the divided neurilemmæ, sloughed away long before union had taken place between the ends of the nerves. Within the last few years suturing has become more common, and the experience of many leading surgeons have been published and the results tabulated, so that we are now in a better position than formerly to form a correct idea of the practicability of the operation, both primary and secondary. This operation,

like many others, seems to have been revived on the introduction of aseptic surgery, and any success that we may have is due more to that fact than to any superior judgment or mechanical dexterity that we possess over the older surgeons.

At the present time, the unanimous verdict of the profession is strongly in favor of both primary and secondary suture, but the restoration of nerve-function is much more rapid in recent than in old cases. Mr. Bowlby has gone so far as to affirm that in no case has complete restoration of function ensued when operation has been delayed more than one year. This, however, is quite a mistake, as several recent reports show. In the case operated upon by myself, restoration of function followed an operation performed three years after the occurrence of the accident. The mistake, no doubt, was due to the fact that his report, or summary of cases, only reached as far as 1885. I will now give a résumé of the ultimate results of a number of published cases of secondary nerve-suture that have come under my observation.

Mr. Scoto, in a paper on nerve-suture, read before the surgical section of the Academy of Medicine in Ireland, relates the case of a young man twenty-one years of age, in which the median and ulnar nerves were completely divided. Eighteen weeks after the injury, the ulnar nerve was sutured, and in five days after the operation sensation was markedly improved. The median nerve was sutured in about ten months after the accident, and in three weeks the patient could distinguish the touch of a pin's point in all parts supplied by the nerves.

Mr. Bland Sutton sutured the median nerve ten weeks after division, and the patient recovered perfect use of his hand.

M. Lillaux relates a case in which he sutured the median nerve, and in three hours after the operation there was a partial return of sensibility. The patient recovered completely.

Ledderhose sutured the radial nerve six months after division. The function of the muscles was restored slowly, but perfectly. After a year, electro-mobility and sensation were found normal.

Mr. Bowlby gives a summary of all cases of secondary nerve-suture occurring in his own practice, as well as those that came under his observation in St. Bartholomew's Hospital, together with all cases recorded in surgical literature up to December, 1885, in all 67 cases, with the following result. Successful, 27; partially successful, 24; failures, 16.

Polaillon presented a case of primary and secondary nerve-suture, at a meeting of the Société de Chirurgie, on June 1, 1887. The case was that of a man who had a wound of the wrist, by which the cubitat and median nerves were severed, the primary suture of the nerves was a failure, but some time after secondary suture was done with perfect success. Time elapsing, not mentioned.

F. J. Shepherd, M.D., of Montreal, reports a case in the *Canada Medical and Surgical Journal*, of a man, aged fifty, who had his ulnar nerve cut with an axe, in the beginning of April, 1885. On the 24th of June, the nerve was sutured, that is, about ten weeks after the operation. The wound was firmly healed on July 8th. Sensation was good, but motion was deficient. He heard from him in January, 1886, when he was fast recovering the use of his arm, and had gone back to work.

Dr. Roddick, of Montreal, sutured the sciatic nerve, in May, 1884, seventeen months after its division. The immediate result was the healing of two ulcers on the foot. Sensation did not return for some time. Motion was not complete at the time the case was reported, but he was still improving, and could walk without a stick. I have now given a brief report of all the cases of secondary nerve-suture that I have been able to collect; but I have seen no account of any successful operation after so long an interval following the accident as in the case I am about to report. In this connection it might be well to call attention to the appearance of the ends of the divided nerve, after the lapse of one, two, or three years. It is generally stated that the proximal end of the nerve becomes bulbous, while the distal end is atrophical. This is not strictly correct, as in the case I operated on both ends of the nerve, "the upper, for upward of an inch, and the lower, for half an inch," were very much enlarged from fibrous thickening. This I do not regard as an unfavorable condition for operation, as it affords a better opportunity for bringing the divided ends together by giving a firmer hold for the suture. When the ends of the nerve are freshened the nerve proper can be seen occupying the centre of the thickened mass of a grayish-white color, thus showing that the thickening is principally from the neurilemmæ.

CASE.—David D——, aged twenty, on January 22, 1885, while working with another man scoring timber accidentally threw back his leg, and the axe in the hands of his companion struck him, making a deep clean cut in the lower and back part of his left leg, dividing the tendo-Achilles, posterior tibial artery, and nerve. The cut was bandaged and he was removed home when a doctor was called who redressed it, drawing it together with four stitches. Subsequent hæmorrhage took place, which was controlled by pressure. He was confined to his bed for sixteen weeks. The wound was treated without any extension of the foot on the leg, and, consequently, the tendon was lengthened about one inch from the cicatricial tissue. No attempt was made to ligature the artery or suture the nerve at the time.

The patient was unable to use his foot or attend to his work from the time of the accident in January, 1885, till he entered the hospital in May. 1888. The slightest pressure over the plantar surface of the foot gave rise to ulceration.

Condition on entering the hospital—The tendo-Achilles was found lengthened about one inch. The muscles above and below the seat of injury were considerably atrophied and quite flabby. A number of old cicatrices were to be seen on the heel and plantar surface of the foot, the result of several small ulcers that had appeared from time to time. There was a small ulcer occupying the plantar surface immediately beneath the internal cuneiform bone. The foot was quite warm and the circulation apparently good. Sensation in the dorsal aspect of the foot was good, but on the plantar surface was entirely gone.

The small ulcer on the foot could be pressed or handled in any way without giving rise to pain or tenderness. On the 4th of June an operation was performed for the purpose of suturing the ends of the nerve. The incision was made through the old cicatrix on a line with the nerve, when the divided ends were found embedded in the cicatricial tissue, and separated from each other for at least half an inch. Both ends were bulbous for a considerable distance. The ends were freshened and brought together with fine silk sutures. The upper segment of the nerve had to be well drawn down, and the foot fully extended on the leg before the ends could be brought together. The wound was then closed by silk sutures and dressed with dry antiseptic dressings. The limb was then placed on a posterior splint with a footboard and the foot extended to its fullest extent.

June 5th.—Temperature, 100° F.; considerable pain; retention of urine relieved by catheter.

June 6th.—Patient quite easy. Temperature, 99 °F. Catheter has still to be used. There is sensation in the foot this morning. The prick of a pin can be felt over all the tract supplied by the posterior tibial nerve. The small ulcer is painful.

June 13th.—Ulcer completely healed. The sensation is fairly good. Complains of slight pain in the leg and foot if moved suddenly.

July 3d.—Has a fair amount of movement in the ankle-joint, not able yet to control movement of toes, as any pressure on end causes them to be suddenly extended; quick movement of the ankle causes a jerking painful

sensation. Patient with closed eyes is able to locate the position of my finger on foot with considerable accuracy, and at once responded when a needle was applied.

July 4th.—Patient left for home this A.M., wound completely healed. I heard from him on the 28th of July, when he informed me that both sensation and motion were gradually improving and that he could now walk for a short distance with considerable comfort; as he expressed it, "My foot is first class, and am only waiting for further instructions to use it more."

On September 7, 1888, my clinical clerk received a letter from him in which he says, "My foot is doing first class, I have a good deal of feeling in it, and can walk splendidly without crutch or stick. There has been no ulcers since I left Toronto. I have no pain except after walking a long distance, when it feels a little sore and tired, but this soon passes away."

The length of time elapsing between the accident and the suturing of the nerve, viz.: two years and six months, and the rapidity with which sensation and motion returned is my only excuse for publishing the case.

Clinical Department.

MATERNAL IMPRESSIONS.

DR. R. GROSS, of Eureka, Cal., writes: "In THE MEDICAL RECORD of November 17, 1888, page 607, there is a communication from E. P. Murdock, of Chicago, Ill., in which he claims that searchers after truth are 'made tired'—or 'weary,' as he puts it—because any medical man who claims to be educated should entertain an idea that maternal impressions can in any way leave their mark on the child *in utero*. I am aware of the fact that physiologists hold that, when the ovum has once been cast off from the ovary of the mother, it is no longer an integral part of her body, but becomes pseudo-parasitical, and argue from this that maternal impressions cannot influence the fœtus, because that can only be done through the influence of the nervous system. Be that as it may, the two following cases make me a believer that maternal impressions can, and do, leave an impress in some inexplicable way, in some cases.

"In the winter of 1871 or 1872—I have not my case-book at hand, consequently cannot give the exact date—I attended in confinement a Mrs. R——, in New Brunswick, Canada. As soon as the child was born she asked me if the babe had a hare-lip? I said 'Yes.' Then she said: 'Oh, dear me, I can never have a child without that deformity. When I was like for the third baby before this I saw two women fighting, and one struck the other with a piece of brick on the upper lip and cut a gash in it. I was very much frightened, and when my babe was born it had a hare-lip. The next babe was just the same, and Dr. T——, who attended me, said all my children would be marked in the same way. From the moment I find I am in the family way I begin to see my child with a hare-lip, and I can't get my mind off it.'

"I asked her if there were any cases of hare-lip in her or her husband's family? She replied, 'No.' Then I said, 'You will never have another child with a hare-lip; there is no such thing on record—it is impossible for a woman to have more than three hare-lipped children.' The same thing was authoritatively promulgated to the husband and the old ladies in the neighborhood. I knew of two children being born subsequently to her without any deformity.

"Second. A year afterward I attended a young woman in Calais, Me., on the birth of her first child. As soon as I could leave the mother the nurse called my attention—in an adjoining room—to two long narrow blisters on the back of one of the child's forearms.

"The raised cuticle was still present; on removing it the underlying surface was still red, presenting all the appearances of recently healed blisters.

"The mother knew nothing of this, neither did she hear the conversation between me and the nurse. I asked her if anything had happened recently to herself, or in her presence. After thinking some time, she said: 'About three weeks since a little child, where I was, fell with its bare arm on the stove and burned it on its outer portion.' When shown the marks on the babe, she said they were similar to what was on the child.

"Although I have often made light of a woman's fears when she told me that she had 'had a fright, and was sure her babe would be marked,' and I cannot recollect an instance where I assured the woman that her fears were groundless that the result did not verify my prophecy, still, the two foregoing cases leave me convinced that in certain cases, in nervous women, shocks may leave an impress on the fœtus *in utero*."

Progress of Medical Science.

POISONING FROM AN EXCESSIVE DOSE OF SULPHUR.—A correspondent of the *British Medical Journal* records the following observation: J. S——, mechanic, had suffered for some time from externalp iles. He applied to a chemist, who sold him a pennyworth (one ounce) of sublimed sulphur, with directions to take it overnight. This was on Monday; he took the dose, and repeated it on Tuesday. On Wednesday the doctor was called in hurriedly, as the man was supposed to be dying. He found him lying on his back in bed, utterly prostrate and partially insensible. The patient had had repeated rigors during the day, and in lucid intervals complained of intense frontal and vertical headache, with aching, griping pains in the bowels. His symptoms on examination were briefly: Temperature, 104°; pulse hard and quick (120 per minute); tongue dry and deeply furred; breath fetid, and smelling strongly of sulphuretted hydrogen; pupils strongly contracted and insensible to light; skin bathed in a profuse clammy perspiration; abdomen tympanitic and very tender on slight pressure. He retched and vomited almost continuously, and was several times purged—both vomit and dejecta being composed mainly of slightly bloody mucus mixed with fine particles of sulphur. The urine he had passed (in driblets) also contained blood. Having ascertained the cause of his illness, the doctor had hot fomentations applied to the abdomen, and administered a moderately large dose of castor-oil. The next day he was still purged, but most of the irritant sulphur appeared to have been eliminated, so he considered it safe to treat the case as one of acute enteritis, and put him under a course of opiates. He remained in bed for about a week, and made an uninterrupted recovery. The case appears interesting since sulphur is not usually counted as a poison. The dose taken (two ounces) was very large, and the symptoms produced were certainly those of a strongly irritant poison.

SUCCESSFUL VAGINAL HYSTERECTOMY FOR CARCINOMA UTERI.—Dr. William H. Wathen, of Louisville, Ky., read a paper with this title before the Southern Surgical and Gynæcological Society, at Birmingham, Ala., December 5, 1888. The patient presented herself for examination in August; she was thirty-four years of age, and the mother of five children. From the history given it was concluded that the disease had begun twelve or eighteen months previous. The uterus was in normal position, perfectly movable, and no enlargement of pelvic or other glands could be detected. Carcinoma of the cervix uteri extended up the endometrium, but did not involve the vagina or any of the uterine adnexa. She was suffering with almost constant bleeding, the blood mixed with offensive matter. Her digestive and assimilative functions were bad, she was rapidly losing flesh,

and the general appearance indicated approaching cach exia. The operation was performed October 9th, at the Norton Infirmary, of Louisville, as soon as her local and general condition could be placed in good condition. She was prepared for the operation by being well purged, carefully bathed, the hair cut from the pubes, and the parts washed with ether and a $\frac{1}{1000}$ solution of bichloride of mercury, and the vagina washed with two gallons of hot water which had been boiled. The instruments and sponges were placed by the nurse in a weak carbolic acid solution. The patient was placed in an exaggerated lithotomy position, chloroform administered, and the neck of the uterus exposed by a Sims speculum and retractors, and drawn to the vulva with a heavy vulsellum forceps. The vagina was cut away from the cervix about one-fourth inch from its attachment, and two or three small bleeding arteries secured by catch-forceps. The pouch of Douglas was opened, and all posterior attachments of the uterus rapidly separated; then the uterus was carefully dissected from the bladder, great care being used to avoid wounding this organ or the ureters. Finally, all that held the uterus in position had been divided except the folds of the broad ligament. The index-finger was now well hooked over the left ligament, and it was secured at a distance from the uterus by a catch-forceps of Dr. Wathen's device. The right ligament was clamped in the same way; both were then divided by the scissors near the clamps, and the uterus, ovaries, and tubes were pulled away through the vulva. The uterus was not inverted, and was removed in twenty minutes; not more than one or two ounces of blood were lost during the operation, and none after it. To prevent the possibility of hemorrhage, all bleeding surfaces or points were caught in catch-forceps, so that when the operation was over eight pairs were left in the vagina. The small ones were removed in twenty-eight hours, and the two large ones clamping the broad ligaments in fifty-two hours. A small pledget of sublimated cotton was introduced into the vagina to hold the forceps apart and assist drainage, the vulva well covered with absorbent cotton and a T-bandage applied. No sutures were used to unite surfaces, and the vaginal vault was left open. No vaginal washes were used, but the dressing of cotton removed twice daily, and the external parts carefully cleansed. Her pulse after the operation and the first day was sixty beats per minute; it then ranged from sixty to ninety, seldom above seventy-five. Her temperature reached nearly 101° F. the second day, owing to the irritability caused by the presence of the forceps, and then ranged from 98° to 100° F. At no time was there any shock or sepsis, and she made an uninterrupted recovery, being out of bed the fifteenth day, and leaving the Infirmary the nineteenth day after the operation. Dr. Wathen believes the mortality in vaginal hysterectomy can be reduced as low as in ovariotomy, and that by the use of clamps the technique of the operation is so simplified and improved that the loss of blood is no longer an important factor, as the uterus, etc., can be removed in from ten to twenty minutes.

The Medical Treatment of Fibroid Tumors of the Uterus.—A paper with this title was read by Dr. Bedford Brown, at the meeting of the Southern Surgical and Gynecological Society, in Birmingham, Ala., December 5, 1888. The author gave the results of his observation of twenty-seven cases which had occurred in his practice during the past thirty-seven years. In these cases are included all classes, from the most grave, accompanied by alarming hemorrhagic tendencies, peritonitis, septicæmia, and general prostration, to those in which the system never sympathized to any marked degree. Some of these had remained under his treatment as long as twelve to fifteen years, some for five or six years, others a shorter time, and in all there had been improvement, at least one-third amounting to positive recovery. Reports of a number of interesting cases were given in which the lacto-phosphates and hypophosphites were freely used, in some cases in connection with ergot to repress hemorrhages. In cases of excessive hemorrhage he believes the phosphatic treatment, persistently pursued, ergotine and strychnia internally, and the local application of iodine and the extract or normal liquid ergot alternately every third day, will so impress the general and local circulation and the process of nutrition as to regulate the hemorrhagic tendency. To produce favorable results the treatment must be pursued systematically, regularly, perseveringly, and continuously. Several cases of acute glandular affections were cited in which the effects of the hypophosphites and lacto-phosphates were really marvellous, and the conclusion reached by Dr. Brown was that they must exert a very great influence on the functions of that system as well as on the metamorphosis of tissue by promoting its disintegration and removal. He dwelt more forcibly and specially on the necessity of the rapid and thorough saturation of the circulation with the phosphates of lime and soda, as a means of restoring the lost equilibrium of nutrition, arresting increased cell proliferation and exudation, and promoting the absorption. He contends these agents have not heretofore been given in sufficient quantities to regulate the process of nutrition. In grave and serious cases he has administered as much as a drachm of the syrup of the hypophosphites every two or three hours, and two drachms of the lacto-phosphates three times daily until the object was attained. In summing up the results of the medical treatment of fibroid tumors it may be stated that the continuous administration of ergot, in the form of ergotine or fluid extract, retards the fibroid growth, lessens the tendency to hemorrhage, and in certain states of fibroid growth, on occasion of hemorrhage, given hypodermically, or internally, will arrest it. But at an advanced stage, when the growth of submucous fibroid becomes very great, and the walls of the uterus have become very thin and attenuated from over-distention and absorption and paralysis of uterine muscle, then the ergot ceases to act as a hæmostatic. The fluid extract of hydrastis acts on the fibroid growth to a limited extent. Local treatment by means of iodine and ergot applied extensively over the cervix and roof of the vagina gives important therapeutic aid. By a judicious and timely combination of the various agents the author believes that the great majority, if not all cases of uterine fibroid, may be shorn of their worst features; that the sufferings of those so afflicted may be greatly alleviated; that life may be prolonged; that all may be benefited, and certain proportions cured. He asserts that benefit has resulted from treatment in every case when the patient was under charge long enough to get fully under the influence of medical treatment. Hence he is convinced, by a long and not inconsiderable personal experience, that medicine can do much, and is capable of doing still more in the future, for the benefit and relief of these cases.

Effeminacy and Anæsthetics.—Miss Lynn Linton thinks that men are becoming effeminate, and lays the blame in part to anæsthetics. She is particularly severe upon the Italians, of whom she says: "Nothing differs so much in races as tenacity of life. A southern Italian dies of a shock to his nervous system which would not do more than give an Englishman a headache. He takes to his bed for a fit of passion, and is seriously ill when he "makes bad blood." He has become as brittle as a starfish, as invertebrate as a sea-cucumber; and what climate and careless ease of living, the want of hard work and the insufficient food resulting, the soft self-indulgence of idleness, and the absence of that hardening process which is got by struggling with evil conditions—what all these have done for him our moral effeminacy is doing for us; and if we are not on the alert and do not keep up our fighting blood as men should, we shall become just as molluscous, as invertebrate, and as brittle as those degenerate descendants of warlike progenitors."

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CREASOTE IN THE TREATMENT OF PHTHISIS PULMONALIS.

IT is but natural that a disease which is ever present among us should receive the uninterrupted attention of physicians. The discovery of Koch, which was at first supposed to be barren of practical results, especially as regards treatment, has undoubtedly given a mighty impulse to the search for rational phthisiotherapy. While all physicians are agreed as to the utility of improving nutrition in phthisis, some believe that drugs are entirely useless, except to afford symptomatic relief. Most physicians, however, continue to employ medicines in a more or less tentative way.

Of individual drugs, creasote has lately been urged in a manner which really appears to bespeak for this substance considerable power for good, more particularly in the earlier stages of the disease. To the European publications touching the value of creasote in phthisis THE RECORD has repeatedly referred. In our own country the subject has quite recently received the attention of several physicians, notably of Drs. Austin Flint and Beverley Robinson. The former of these has published, in the *New York Medical Journal*, a report of ten cases of consumption treated by the use of creasote. From his study of these cases he is led to advance the opinion that creasote by the stomach and by inhalation, in cases of solidification without cavities, effects prompt and decided improvement in all phthisical symptoms, with increase in appetite, weight, and strength, even with surroundings much less favorable than would obtain in many cases in private practice.

In cases with small cavities much less improvement is to be looked for, but some benefit may be expected.

In cases with large cavities the treatment seems to have little more than a palliative influence.

His observations are defective as regards the influence of the treatment upon the bacilli. In one case, with large cavities, it was noted that the number of bacilli was diminished. No other examinations for bacilli were made during or after treatment.

No estimate was made of the relative value of creasote taken into the stomach. As regards inhalations, it is assumed that the chief benefit was derived from the creasote, the spirit of chloroform and the alcohol rendering this agent more volatile, and soothing the mucous surfaces. The inhaled vapor undoubtedly penetrated by diffusion as far as the air-cells. It is by diffusion that fresh air, anæsthetic vapors, etc., penetrate the lungs, and cases of pneumonokoniosis illustrate the fact that even solid particles may be carried to the pulmonary vesicles.

He has also employed the method of inhalation, conjoined with other treatment, in private practice, with good results.

From the observation of a much larger number of cases Dr. Robinson (*The American Journal of the Medical Sciences*, January, 1889) is convinced that "we have in beechwood creasote a remedy of great value in the treatment of pulmonary phthisis, particularly during the first stage. Not only does it lessen or cure cough, diminish, favorably change, and occasionally stop sputa, and often relieve dyspnœa; but it also frequently increases appetite, promotes nutrition, and arrests night-sweats. It does not occasion hæmoptysis, and rarely causes disturbance of the stomach or bowels, except in cases in which it is given in too large doses."

Dr. Robinson also believes that there is a fair amount of evidence to show that by its long-continued judicious use, it may and will modify favorably the local changes in pulmonary phthisis. Whether it has any antiparasitic effect remains to be determined in a more accurate manner. It is certainly, according to this author, an unobjectionable medicament from any point of view. It is easy of administration, it is adapted to the majority of sufferers from pulmonary phthisis everywhere; it may be used with some advantage in all stages of this disease, and finally, it has proven itself superior to any other medicinal treatment with which he is familiar.

Dr. Robinson employs creasote both internally and by inhalation, the combined method being, in his judgment, the most efficient one. The ordinary dose has been half a minim repeated every two or three hours. English beechwood creasote is given the preference over other preparations on account of its purity. It is employed with whiskey and glycerine according to the following formula:

℞. Creasote (beechwood)..... ℥ vj.
Glycerine..... ʒ j.
Whiskey..... ..... ʒ ij.
M. Sig.: As directed.

From what has been written on the creasote treatment of phthisis, we may feel reasonably certain that the remedy is not devoid of utility in its proper sphere. The climatic treatment of consumption is, after all, but the rich man's remedy. By far the larger number of phthisical patients will continue to seek relief from their ailments by the use of medicines, and creasote will doubtless soon be employed on a sufficiently large scale to definitely determine its true value.

CAFFEINE IN PULMONARY AFFECTIONS.

ALTHOUGH caffeine has long been recognized as an excellent heart tonic, and has been so used for a number of years, it is only recently that attention has been called to its value in disease of the respiratory organs. It is more particularly in those affections of the lungs in which there is need also of a cardiac stimulant that the drug has been found useful. In an article in the *Berliner Klinische Wochenschrift*, Nos. 25 and 26, 1888, Dr. C. Gempt, reports several cases of pulmonary disease in which this

drug was used with beneficial effect. He formulates the results of his experience in the following conclusions:

1. The administration of caffeine is indicated in cases of acute lobar pneumonia as soon as commencing heart failure manifests itself by a very rapid or irregular pulse.

2. The drug should be given, if possible, before the actual symptoms of collapse appear, although even after this condition has set in, unexpectedly it may be, the indication for the remedy is still urgent, and the results of its exhibition are often most gratifying.

3. In cases in which there already exists valvular disease or cardiac weakness, the administration of caffeine should be begun at the very onset of the pulmonary affection. The same is true where pneumonia attacks those given to alcoholic excess, or the aged.

4. The effects of the remedy are seen in diminished frequency of the pulse and respiration, increase of arterial pressure, lowering of the temperature, and improvement in the subjective sensations of the patient.

5. Although the action of the remedy is rapid, nevertheless, in some cases of especial gravity, it is better to administer it by subcutaneous injection. After the defervescence the drug need be given for but a short time only.

6. The same indications for the use of caffeine are present in atelectasis, pulmonary hypostasis, emphysema, and asthmatic conditions.

CREOLINE AND THE COMMA-BACILLUS.

CREOLINE is one of the most recent of the many new antiseptic substances that have of late years been brought to the notice of the profession. As is the case with most new remedies, the advocates of this drug claim for it the advantage of great efficacy and harmlessness to the animal organism; but whether these claims will be substantiated by a more extended trial remains to be seen. Some experimenters have already asserted that the substance is capable of giving rise to toxic symptoms in even moderate doses, and doubtless it will be found that care is necessary in its administration as well as in that of other powerful antiseptics.

Drs. Sirena and Alessi have made a series of experiments with creoline to determine its action upon the comma-bacillus of Koch, and have been led by the results obtained to place great hopes upon it as an efficient remedy in cholera (*La Riforma Medica*, Nos. 257 and 258, 1888). It is not necessary to give the details of these experiments, which may be found in the original article, and we will reproduce here merely the following conclusions which the authors have reached, as a result of their labors:

They state that the addition of from eight to ten drops of a three per cent. aqueous solution of creoline is sufficient to completely sterilize, within five minutes, a pure culture in broth of the comma-bacillus. From one to four drops of the same solution, added to ninety drops of a broth culture, will prevent the development of the comma-bacillus. From one to three drops of a one per cent. solution retard the development of the micro-organisms, and four drops or more prevent it completely.

The solutions of creoline are apt to lose their efficacy in time, hence it is necessary to use fresh solutions whenever a certain and speedy action is desired.

The authors regard creoline as an antiseptic of great value, and recommend that it be employed in the treatment of cholera. They believe also—and this belief they hope to fortify by experiments in the early future—that the remedy will be found of great efficacy in the treatment of tuberculosis.

THE ST. PETERSBURG ACADEMY OF MEDICINE.

IN a series of articles by M. Huchard, on "Medicine in Russia," appearing in the *Revue Général de Clinique et de Thérapeutique*, there is an account of the St. Petersburg Academy of Medicine, which is an institution differing so much from societies of the same name with which we in this country are familiar, that, possibly, a brief description of its constitution and aims may prove not uninteresting.

This Academy is not such as we understand it, a scientific association of physicians founded for the mutual improvement of its members, but is rather a combined medical school and hospital. There are twenty-three regular professors, receiving a salary of about $1,500 each, and four others at a salary of $1,000. The appointments are competitive. There are also about fifty privatdocenten, who give courses of instruction to students, but without pay. Students desiring to enter the Academy must present the *testimonium maturitatis* certifying that they have passed eight years in the *gymnasium*, and must submit to an examination at the end of each year. The students, during their last three years in the school, receive, on condition of serving four and a half years in the army after their graduation, an annual stipend of $180. Each year the seven graduates who have passed the best examination have the right to remain three years longer in the Academy, at a salary of $600, in order to pursue further their studies in physiology or pathology, as they may elect. At the end of this period, the three who have obtained the highest rank are sent abroad to study for two years, receiving in the meantime a salary of $1,000. Upon their return they may study another year in the Academy. It is from among these that the professors are usually chosen, the other graduates ordinarily entering the army.

At the expiration of four years' service as military surgeons, fifty are selected—twenty-five physicians and twenty five surgeons—to return to the Academy in order to study two years longer, after which time they return to the army receiving a higher rank.

The hospital internes are graduates in medicine. They are appointed for no particular term of service, but may retain their positions as long as they desire. The chiefs of clinic are the professors' assistants, and perform the duties of the latter in their absence. They receive an annual salary of $600, and retain their positions at the will of the professors under whom they serve.

The Military Hospital of the Academy has accommodations for eight hundred patients. There are four medical clinics, which are graded, two being for third-year students and one each for fourth and fifth year students. This principle of grading is carried out also in the gynecological and special clinics, there being one of each for fourth and

fifth year students respectively. The appointments of these clinics, especially of the gynecological, are excellent.

Professor Slavyanski's gynecological clinic contains fifty beds. The lying-in ward is large and scrupulously clean. All the tables are covered with slabs of glass, the floor is of hard wood varnished, and the corners are rounded to facilitate the removal of dust and thorough antiseptic cleansing. A second ward, finished in the same way, is provided, to which the patients may be moved in case there should be an outbreak of infectious disease. Adjoining these wards is a little room where the newly born children are baptized. There is a separate ward for patients suffering from cancer of the uterus or other diseases attended with discharges of a bad odor. There are also separate rooms for minor and major operations, the latter being well lighted and provided with an apparatus by means of which the walls, ceiling, and floor can be rapidly washed. The gynecological wards contain each not more than five or six beds, some having but two. Professor Slavyanski's private room is luxuriously furnished, and on the wall the place of honor is occupied by the portrait of Ambodik, who is regarded as the first Russian accoucheur, the practice of obstetrics having been before his time wholly in the hands of the Germans.

The library of the Academy, which is under the direction of Dr. Kondratiev, contains upward of one hundred and ten thousand volumes and five hundred periodicals. Each student is allowed to take two books at a time from the library, and to keep them for a month. Special working-rooms for the professor and students are provided, where they can consult any of the works in the library between the hours of eleven and five.

PRIZE-MONEY FOR SCIENTIFIC WORK.

The Paris Académie de Médecine offers prizes for the year 1889 to the amount of over thirty-five thousand francs ($7,000). This sum is distributed in twenty-one special prizes, varying from $100 to $1,000 each.

If money could purchase scientific zeal, the rewards offered by the Académie ought to be very fruitful in results. As a matter of fact, however, one hears very little of these highly paid prize-essays which the Paris Académie stimulates into existence.

The offering of prize-money to scientific workers is a thing which has its field of usefulness, but this field is a narrow one. The money is generally better applied in encouraging and supporting those whose industry and skill in scientific work are known, or in expending it to secure the investigation of certain definite problems.

A medical organization which has $7,000 to give away annually is much to be envied. It represents more than the total income of any American society, with one or two exceptions. As this money was received chiefly in the form of legacies for a specific purpose, the prizes no doubt have to be offered from year to year, with the usual relatively barren results.

AN ATTACK ON ABORTIONISTS.

No more extraordinary performance has occurred in years than that at present going on in Chicago regarding the repression of the practice of infanticide and abortion. A newspaper of that city has undertaken to agitate publicly the subject of abortion, and to bring to justice those persons who practise it in Chicago. For this purpose it engaged a "girl reporter," who went around among various doctors and midwives. She represented herself to be a single woman, who, through indiscretion, had become pregnant. Taking notes as she went, she finally secured a list of doctors who would not, and of doctors and midwives who would, perform some operation upon her. This list is published in full upon the editorial page of the paper in question, while the news columns are filled with the details of the conversations held regarding her condition.

A letter from the President of the Medico-Legal Society endorsing the work of the *Times*, and another from the President of the Chicago Medical Society, headed with a full list of the faculty of Rush Medical College, are also published most prominently on the editorial page.

The whole performance has an offensively sensational appearance, and we regret to find our Chicago brethren thus aiding and abetting such an example of noisy and nasty journalism. While the exposure may have some temporary benefit in making professional abortionists more careful, it is very doubtful if such methods are permanently useful. On the other hand, the publicity given to the details of abortionists' methods may eventually actually increase the evil which it is so desirable to abate.

News of the Week.

The Resignation of Dr. H. T. Formad, as junior professor of pathology and anatomy at the University of Pennsylvania, is announced. The direct cause of Dr. Formad's resignation was the promotion over him of Dr. John Guitéras, United States Navy, to succeed Professor Tyson.—*Boston Medical and Surgical Journal.*

The Visit of Sir Morell Mackenzie to Edinburgh stirred up a considerable amount of ill-feeling among the medical element in the University. The professors of the University did not—cordially, at all events—give their countenance to Sir Morell's two meetings. The students did; and they resented the coolness of their teachers.

Dr. James A. Emmerton, of Salem, Mass., died on December 31st, aged fifty-four. He was graduated from Harvard, and during the war he served as an army surgeon. He was assistant surgeon at the New York State Lunatic Asylum at Utica in 1866–67.

A Memorial Hospital has been opened at Long Branch.

The Hospital Saturday and Sunday Collection had reached the sum of $25,000 at last reports.

Calage, or wedging of the body in the berth, is said by M. Marcel Baudouin to be a sure preventive of seasickness, at least in many cases. M. Baudouin advises the patient to lie upon one side and have the body thoroughly bolstered and braced so that it moves with the ship.

California Medical Colleges.—The Cooper Medical College held its annual commencement on November 18th, and graduated a class of fourteen. The Medical Department of the University of California held its commencement on November 16th, and graduated a class of ten.

"The Pacific Medical and Surgical Journal."—Dr. William S. Whitwell, who has ably edited this journal, has transferred its management and ownership to Dr. D. A. Hodghead.

Claimants for Vaccine against Cholera. — Dr. D. J. Ferrán, whose claims to the discovery of a vaccine against cholera were widely advertised some three years ago, transmits a request to the Paris Académie des Sciences that it authorize an investigation of the Ferrán method, as well as that of Dr. Gamaleïa, recently announced. Dr. Ferrán, whose skill is doubted more than his sincerity, also claims priority over Dr. Gamaleïa in regard to the discovery of the cholera vaccine.

An Attack on Pork.—Our esteemed contemporary, *Daniel's Texas Medical Journal*, after having let the world roll round in its old bad way for some time, has suddenly roused itself and made a violent attack upon the hog. The *Journal* has reason to believe that Moses was an advanced sanitarian, and would, as it seems, add the great law-giver's fiat against pork to the eternal interdictments of the decalogue. Exactly why Texas is thus trying subtly to undermine the prosperity of Cincinnati we cannot say. Pork is not a meat that slips into the circulation without some strain on the gastro-enteric secretions; but it is no worse than veal, nor certain varieties of the Texas steer which find their way eastward. The pig is likely to be with us indefinitely, and it will be better to improve his habits than exterminate him. We fear that the Austin butchers have been working some of the smaller domestic animals into our contemporary's morning sausages.

Removal of Tumor of the Brain.—Dr. E. H. Bradford removed a tumor weighing about nine drachms from the brain of a patient at the Boston City Hospital recently. The symptoms, which had lasted about two years, were headache and double optic neuritis, with some vertigo and vomiting, tactile hemianæsthesia, most marked in the left arm, and loss of muscular sense in the arm, paralysis of the left arm, and partial paralysis of the leg, with contracture and exaggerated tendon reflexes and convulsions, beginning with a sensory aura in the left wrist and clonic spasm of the left hand. The patient died three-quarters of an hour after the operation, from shock.

Northwestern Medical and Surgical Society of New York.—At the Annual Meeting of the Northwestern Medical and Surgical Society, held on the 19th ultimo, the following officers were elected for the year: *For President*, Dr. A. M. Jacobus; *for Vice-President*, Dr. S. Baruch; *for Secretary*, Dr. Edward S. Peck.

Hysterorrhaphy.—In the article on this subject, on page 756, the sentence, "The fame of this gynecologist," etc., should read, "the fame of the gynecologist." The implied personal reference distorts the meaning of the sentence.

A Provident Dispensary in Philadelphia.—It has recently been announced, says *The Medical and Surgical Reporter*, by advertisement in the daily papers and otherwise, that a so-called "Provident Medical Service" has been organized in Philadelphia, with a rather imposing Board of Managers and a well-known medical man as President. The affair is a dispensary, modelled on the lines of what are called "Provident Dispensaries" in London. Persons treated here are to be charged the small sum of twenty-five cents for each consultation. The idea is that this will encourage those who are too poor to pay the usual fees, at least to pay something; and that thus worthy people in straitened circumstances will be saved from the disgrace of pauperism.

Death of Dr. Thomas Goodwillie, of Vernon, Vt.—Dr. Thomas Goodwillie, brother of Dr. D. H. Goodwillie, of this city, died of pneumonia at his residence, Vernon, Vt., in the forty-eighth year of his age. He graduated from the Classical and Medical Departments of Dartmouth College, and spent his professional life in Vernon. A widow and three daughters survive him.

The New York Pathological Society.—The following officers were elected at the annual meeting of this Society, held on January 9, 1889: *President*, Dr. William P. Northrup; *Vice-President*, Dr. H. M. Biggs; *Secretary*, Dr. T. L. Stedman; *Treasurer*, Dr. J. H. Hinton; *Editor*, Dr. J. C. Peters; *Committee on Admission and Ethics*, Drs. J. C. Peters, L. H. Sayre, H. P. Loomis, Walter Mendelson, and L. Emmet Holt; *Committee on Publication*, Drs. G. C. Freeborn and W. B. James; *Committee on Microscopy*, Drs. Ira Van Gieson, H. P. Loomis, and John S. Ely.

A Farewell Banquet to Dr. John W. Hunt, of Jersey City.—The numerous professional and lay friends of Dr. Hunt gave him a farewell banquet on Monday evening, at Taylor's Hotel, Jersey City, on the occasion of his changing his residence to Los Angelos, Cal., in consequence of the feeble health of Mrs. Hunt. Mayor Cleveland of Jersey City presided, and introduced the toasting by a history of the career of Dr. Hunt during his residence for a quarter of a century in Jersey City, glancing at his creditable war-record, his founding of the Jersey City Hospital, and his interest in charitable enterprises. Dr. Hunt replied in some feeling remarks. Letters of regret were read by Dr. J. H. Vondy from Drs. George F. Shrady, Lewis A. Sayre, J. R. Leaming, A. B. Mott, and R. F. Weir, of New York, after which speeches were made by Dr. J. W. S. Gouley, of New York, Dr. Smith, of Brooklyn, Ex-Mayor Collins, Major Pangborn, and the Rev. Mr. Scudder.

The Eschscholtzia Californica.—M. Bardet and M. Adrian have examined the American plant called *Eschscholtzia Californica*, and they find that it really contains morphine, and this is the first time that a plant of any other order than the *Papaveraceæ* has been found to contain that alkaloid. It contains also another base, together with a glucoside, which may be very important when their characters have been studied. In any case the drug should be a valuable aid in replacing the opium alkaloid when necessary.—*Paris Cor. New York Medical Journal*, December 22, 1888.

Leprosy Inoculated in a Criminal.—Some time ago, in commenting upon the bacteriological work of Dr. Arning, we stated that he had tested the question of the inoculability of leprosy practically upon a convict, at Kearm. The operation was done in November, 1885. It is now stated that the man is suffering from tubercular leprosy.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, December 20, 1888.

ABRAHAM JACOBI, M.D., PRESIDENT, IN THE CHAIR.

THE PRESIDENT stated that Dr. T. M. Cheesman had recently donated one hundred and fourteen valuable volumes to the library of the Academy.

Dr. Francis V. White, formerly an active member, then a non-resident member, was, in accordance with his desire, reinstated to active membership.

DR. THOMAS E. SATTERTHWAITE read a paper entitled,

A NEW STUDY OF LOBAR PNEUMONIA, WITH DEDUCTIONS FROM AN ANALYSIS OF FIFTY-SIX FATAL CASES.

Pneumonia was said to be epidemic in ancient times, and epidemics, which resembled to some extent pneumonia as now seen, were described in the sixteenth century and afterward; but in the majority of cases the diagnosis was not verified by post-mortem examinations, which were rare in the earlier days of medicine. Epidemic pneumonia does not prevail to any great extent during the present time, yet a certain number of facts sustain the theory that it is occasionally epidemic.

His paper would be devoted to the subject of lobar pneumonia in its primary and secondary forms; the first form he called acuté lobar pneumonia, and the other secondary pneumonia.

To avoid obscurity, however, he mentioned the principal types of pneumonia, as follows: 1, acute lobar; 2, secondary lobar; 3, embolic lobar; 4, bronchial-lobular; 5, the interstitial pneumonia of heart disease.

He preferred the term acute lobar to that of croupous. This was the most common form of pneumonia. In one hundred fatal cases taken from his hospital and private records, the several varieties were represented as follows: acute lobar, thirty-six per cent.; secondary lobar, nineteen per cent.; bronchial-lobular, twenty per cent.; interstitial of heart disease, seven per cent. He had found it most common in males, and most frequently between the years thirty and eighty. It was more particularly a disease of middle life. It occurred nearly altogether in northern and middle latitudes. When the disease originated in one lung it usually selected the right. In his cases it usually commenced in a lower lobe.

The first stage was commonly called the stage of engorgement, the whole tissue being increased in volume, infiltrated with a serous fluid, with more or less transudation of blood from the vessels. The second stage was called the stage of red hepatization, the lung being of a deep red color, unyielding to the touch, and difficult to distinguish from an inflamed liver. It contained little air if any, and almost no fluid. Its cut surface had a rather rough or granular and dull aspect, each speck corresponding to an air-vesicle or bronchiole filled with a firm pellet, consisting of blood-cells and epithelium mixed with fibrine. In the third stage, that of gray hepatization, the reddish tint had yielded to a dirty gray, at first tinged with brown, and then with yellow; the tissue was softer, and on pressure exuded a small amount of fluid; the walls of the blood-vessels were studded with leucocytes; in many cases there was dark pigmentation of the interlobular spaces. The lung might weigh five or six times its normal weight.

In his experience the order of the symptoms was as follows: 1, pain, prostration, and cough; 2, a severe chill; 3, nausea; 4, rise of temperature.

Instead of a severe chill there might be only chilly sensations. Within a few hours the temperature commonly rose to 103° or 104° F. One of the early signs, though seldom the earliest, was fine crepitation. It was heard only during inspiration. It was not a sign which was absolutely essential in diagnosis. Occasionally it lasted the full course of the disease. As soon as the second stage began there was dulness on percussion, with bronchial breathing and bronchophony; also increased vocal fremitus. In the fourth stage, that of resolution, there was returning crepitant râle.

The author was inclined to think that the locality of the affection, whether in the upper or lower lobe, did not influence the production of cough or affect its character. In old people cough might be absent. Sometimes it was the first symptom. The expectoration was peculiarly tenacious and variously colored. One looked for the characteristic prune-juice color, but it was sometimes absent; it might be red, black, green, or colorless. The characteristic sputum of pneumonia had three qualities. color, consistence, and coalescence. This sputum might be present on the first day, or not until the third or fourth, but the characteristic sputum was not always present, and it might occur occasionally when no pneumonia existed, as in nasal or pharyngeal catarrh with hemorrhage, or acute laryngitis, as in a case which he had observed recently. As resolution approached, the sputum was apt to be yellowish in color.

Diarrhœa was often present, also nausea and vomiting. The urine was often scanty. There was a difference of opinion as to the frequency of nephritic implication. Albuminuria was quite common, but not as common as in interstitial pneumonia of heart disease. Parkes was nearly right when he said albuminuria might be present in forty-five per cent. of the cases. It was usually most marked at the height of the disease. Dr. Satterthwaite's statistics showed kidney trouble in forty-one per cent. of his cases; in five per cent. of these there was chronic kidney trouble of long standing. In only eight per cent. was it shown, by clinical and post-mortem evidence, that there was no urinary implication. There was, therefore, positive evidence of acute renal disease in thirty-six per cent. of the cases. This percentage was really too low. But we had most to fear in an exacerbation of an old kidney affection.

Little had been added to our knowledge of the clinical aspects of pneumonia since the studies of Laënnec; what had since been done was by Andral, Chomel, Grisolle, Stokes, Williams, Wilson, Fox, and Fagge. In the stage of engorgement we might expect to find dulness, but we do not. Grisolle found in this stage loss of elasticity in the chest-walls, particularly when percussed in the supra- and infra-spinous fossæ. The crepitant râle was regarded by Laënnec as the first pathognomonic sign. It had been compared to blowing up a dry bladder, etc. It was produced by fluid matter passing into the vesicular substance of the lung. Some seasons it was rarely heard. In old people it might be replaced by a coarse crepitant râle. It was now admitted by the best authorities that fine crepitation was also heard in other types of pneumonia, pulmonary phthisis, and syphilis, and even in bronchitis.

Prolonged expiration preceded tubular or bronchial breathing. There might be bronchophony; metallic voice when considerable area of dulness existed. There was rarely any alteration in the symmetry of the si es.

Pain was most frequent in the nipple; next, at the base of the lung, and it might be felt at any part of the chest. It was due to pleurisy. The pulse was usually 100 or more, and might reach 160. Jaundice was not very infrequent, delirium was common, coma occurred in three per cent. of his cases. It was often uræmic. At first the respiration rose from 22 to 36 per minute, but within two days it might reach 40, 50, or 60.

Inflammation of the lower lobe appeared to produce more oppression than inflammation of the upper. In persons with contracted chest and abdominal distention the disease was not well borne.

There was often decided elevation of the temperature in pneumonia. In children it reached a greater height than in adults. It rose one or two degrees at night, and fell in the morning. The highest temperature in his cases

was 108° F.; the lowest, 100.2° F. In ten, the highest average temperature was 104.3° F. The crisis usually occurred between the third and eighth days, and commonly between the fifth and seventh. Unless there were unusual complications or sequelæ, it should not be delayed more than fourteen days at the utmost. The greatest danger was on the sixth day. The immediate cause of death was usually heart failure from prolonged and exhaustive work, or the influence of poisoned blood on the nerve-centres. He had known only two instances in which respiration ceased before the circulation.

As to etiology, Sturges thought it was produced by cold, dry, penetrating winds; but some later writers, as Ziemssen, thought cold an infrequent cause. Twenty-two per cent. of Dr. Satterthwaite's cases were ascribed to exposure to cold. The disease seldom occurred during the warmer months. Occupation had little bearing on the causation. Regarding the influence of micro-organisms, it would be necessary to show that a pure culture inoculated in the blood remote from the lungs would produce lobar pneumonia, but experiments had almost always failed in this respect, and when the lung itself was inoculated lobular, not lobar, pneumonia had commonly resulted.

The pleura was always involved when the inflammation reached the surface of the lung, which almost always occurred. A comparatively frequent complication was pericarditis, developed by extension of the diseased process, or simultaneously. A more important complication was disease of the kidney, to which reference had already been made. The spleen was apt to be enlarged, and there was catarrh of the intestinal tract. True abscess of the lung was rare. It occurred in none of his thirty-six cases of acute pneumonia, but gangrene was noted. He did not believe phthisis could ever develop from acute lobar pneumonia.

As to the mortality of pneumonia, this question had given rise to much dispute, largely because of indefinite statistics. Its discussion, to be of value, must be based on statistics in which were given; 1, the variety; 2, the patient's age; 3, the general character of the attack. At some seasons the fatality was greater than at others, notwithstanding the same general treatment. Statistics before the middle of the present century gave a mortality from fifty-five down to sixteen or ten per cent. Just before the middle of this century, Skoda published statistics going to prove pneumonia was a self-limited disease. About 1842, Fleischmann, a homœopath, gave a mortality of less than six per cent., which set other physicians thinking, and gradually led to less heroic treatment. The fact that the mortality varied in the hands of the same physicians, showed that each case stood by itself. There was evidence, from a study of the statistics, and from the writer's own experience, to show that the expectant plan of treatment was best. We had passed the period when it could be successfully shown that the disease could be arrested. The causes of death showed what should be the direction of treatment. It should not be the reduction of temperature so much as sustaining the heart and obviating renal complications.

Dr. Satterthwaite doubted whether the high temperature in pneumonia was in itself a demon which must be attacked and overthrown. He had been led to believe by post-mortem studies that the use of antipyretics not only weakened the heart's action, but also had some unfavorable action on the kidneys. Every case of acute lobar pneumonia should be treated by itself, and the indications met as they arose. He had often seen benefit from copious repeated cuppings in sthenic cases. In less vigorous persons relief often followed cold water applications. In defective hepatic action relief had come from large doses of mercurials. In weak heart patients had been carried through with alcoholic stimulants. In renal complications marked relief of pulmonary symptoms had followed remedies directed chiefly to the kidneys. Reduction of temperature was best brought about by diaphoresis in preference to antipyretics.

SECONDARY LOBAR PNEUMONIA.

The author then passed to the consideration of secondary lobar pneumonia, a subdivision which had been recognized by the old French school. His views were based upon nineteen of his recorded cases. Without committing himself to an opinion of their etiological value, he had found antecedent conditions as follows: nephritis in 5; alcoholism in 2; phthisis in 2; burns in 2; rheumatism in 1; fracture of the ribs in 1; hypertrophy of the heart in 1; pleurisy with effusion in 1; pericardial effusion in 1. Contemporaneous affections were present as follows: Abdominal dropsy in 1; pericardial effusion in 1; gangrene of the extremities in 1; aneurism of the aorta in 1; bronchitis in 2; syphilis in 2; endocarditis in 2; hydrothorax in 1. Neither phthisical nor syphilitic process had any apparent connection with the secondary lobar pneumonia, and cases in which there was a suspicion of these as a possible cause were thrown out. The general statistics of secondary pneumonia handed down were not reliable.

Secondary pneumonia was usually insidious. Chill was frequently absent, and when present was not severe. Difficulty in breathing might not be marked. The crepitant râle could be heard, as a rule. The temperature rose rapidly as in acute lobar pneumonia, but averaged somewhat lower. With a comparatively high temperature the patient might survive, while with a comparatively low temperature he might succumb. The pulse often rose sharply at the outset, but averaged about 120. Bronchial breathing and dulness might be the most decided symptoms, and in his experience they were the most common. The expectoration was apt to be scanty and afford little help in diagnosis. Renal symptoms were likely to be more prominent than in the acute disease. There was a decided tendency to suppuration. The duration was about the same as in acute pneumonia, but the crisis was likely to come earlier because the patient had been exhausted by the antecedent trouble. The causes of death were about as in acute lobar pneumonia, and indicated the treatment.

DR. H. D. NOYES, First Vice-president, having taken the chair, asked the author if he wished to indicate the line of discussion.

DR. SATTERTHWAITE suggested the question of etiology, also of mortality-rate, and treatment.

DR. A. H. SMITH thought the paper was full of suggestions on a subject which was on every side beset with difficulties. There was one peculiar fact in the history of acute lobar pneumonia which, according to the view we held regarding it, would have a bearing upon the question of etiology. He referred to the temperature, which early reached a high grade, maintained this a considerable length of time, and then abruptly fell. The usual fall on the fifth or sixth day was not only down to normal, but not infrequently below normal, while no corresponding changes occurred in the physical signs to account for it. This fact would seem to indicate that in pneumonia there was something entirely different from an ordinary inflammation. He thought this might have something to do with the formation of poisons in the blood; that at this period the production of these suddenly ceased, if they existed at all. In other words, it seemed to be evidence of a germ influence; whether that germ were the so-called pneumococcus or some other yet undetermined.

The conditions were also very peculiar in another way, with reference to the circulation. It was the pulmonary circulation which was chiefly disturbed; as a result of which there was an accumulation of blood in the venous system, and a paucity on the arterial side. This caused the labor thrown upon the two different sides of the heart to be unequal; that upon the right side being undue in amount, while the left side had less to do than usual. This fact might have its bearing upon treatment directed to the heart. Heart stimulants generally affected the right side no more than the left. Those used in other condi-

tions to facilitate the circulation of the blood by their effect upon the vaso-motor system, would not in this way prove useful in the present class of cases, for it had been shown there were no vaso-motor nerves connected with the pulmonary vessels. The fact that such a variety of methods of treatment had been employed in pneumonia—some being advocated by one class, and others by another, all to be subsequently dropped and others substituted—seemed to show that no very clear indications had yet been discovered. Certainly, however, when the physician observed, as an effect of the obstruction to the flow of blood in the diseased lung, what had been called collateral fluxing, causing, as it were, a drowning of the patient, there was great temptation to do venesection, which was followed so promptly by relief. But this could be of only temporary benefit in this regard, while it might injure the patient in the way of impoverishing his blood.

He agreed with the author that the use of depressing antipyretics was to be avoided, and yet the reduction of the temperature was often a matter of considerable importance. The skin was apt to be active in pneumonia, and when this was true diaphoretics were not indicated. The blood, being surcharged with excrementitious matter, seemed to indicate the necessity for increased diuresis and catharsis. He was not at all surprised that the expectant method had so many advocates, and had perhaps yielded so good results. He would rather do too little than too much in treating pneumonia. In a limited number of cases, the inhalation of oxygen gas would carry the patient over a dangerous point, particularly when there was a large amount of fluid in the other lung. The blood was capable of taking up only a given amount of oxygen, usually no more than what it received from ordinary air, but that slight additional quantity in these cases reduced the labor of respiration to some extent. The heart should be stimulated, but the question of how much alcoholic stimulants were required must be determined in each case. He thought such stimulation was sometimes carried too far.

Dr. Beverley Robinson had never seen the characteristic sputa of lobar pneumonia in any other disease, and when it was present he regarded it as a positive diagnostic sign. Without speaking of the direct cause of pneumonia, he had observed bodily fatigue and foul air to be very efficient factors. It was often seen in persons who had undergone too great mental fatigue, then attended the theatre, and acquired pneumonia in a moment. Treatment, which seemed to be successful some seasons, would be of little benefit at others, a fact which seemed to show that the types of the disease changed. He was heartily in accord with Dr. Satterthwaite in his disapproval of the use of antipyretics, which, while reducing the temperature, also weakened the heart and acted as depressants of the system. In certain cases digitalis in infusion was indicated, and was much safer than the new antipyretics or the two older ones, aconite and veratrin. He was somewhat surprised at Dr. Smith's only limited commendation of the use of oxygen, the value of which he had first become acquainted with through Dr. S. His course of general treatment was the use of oxygen gas, black coffee, simple brandy, or brandy in milk pretty freely employed, avoidance of drafts, the use of small doses of calomel, and judicious use of a cardiac tonic, as strophanthus or digitalis. He deplored the use of the oiled jacket with cotton beneath, which favored cold and thereby extension of the disease.

Dr. Simon Baruch was much interested in treatment. He employed certain heroic remedies, under the directions of a superior medical officer in the army, in the first case he ever treated, and the patient died, he thought in consequence of the treatment. He dropped that method immediately, and in the next two cases tried veratrum viride. In one of these, dangerous depression of the heart took place, and the other patient died. Since that time he had gradually become wedded to the expectant treatment, and the value of this method was learned by a study of the results of the homœopaths at a time when their treatment was what they pretended it was, by infinitesimal doses; that was, really, by allowing nature to take her course, aided only by diet and hygiene. He was not opposed to modern antipyretics, but they were contraindicated in pneumonia, in which disease there was tendency to heart failure, while the temperature was not really an indication of its dangerous character. The proper way to relieve the heart was to divert the venous blood engorging the right side by acting on the portal circulation. Unless the patient were extremely feeble, he would give eight to ten grains of calomel, and if necessary, follow it up with a saline cathartic. Digitalis might also be indicated. He did not think there was change in the type of the disease; that apparent changes from time to time were due to different conditions under which patients were observed. In hospital practice, for instance, subjects were usually nearly moribund when brought in, and the mortality was high. He favored the cotton jacket, and differed from Dr. Robinson in the view that it produced coldness of the surface. On the contrary, raw cotton took up scarcely any water, and when covered with oiled silk the perspiration beneath remained warm and acted as a poultice.

Dr. Robinson added that in his opinion a poultice was decidedly bad, and a jacket of non-absorbent cotton was radically bad also, for if the patient were exposed to the slightest draft it would tend, if cold would cause it, to increase the disease. If cotton were used it should be changed often enough to keep the surface dry. Regarding calomel, better effects on the liver would be obtained through repeated small doses than large doses, which weakened.

Dr. Satterthwaite closed the discussion, and remarked that he was pleased to know the members favored the expectant treatment.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, December 24, 1888.

Alexander S. Hunter, M.D., President, in the Chair.

A CASE OF CEREBRAL SYPHILIS.

Dr. Ralph L. Parsons had prepared the history of the case for the purpose of emphasizing the importance of early diagnosis and long-continued treatment of syphilis, rather than because of any particular merit in the case itself. The man was forty-five years of age, and gave the following symptoms: His appetite was not good, he slept poorly, his mental and physical condition was depressed, he worried about business affairs, felt stupid, at times was excitable, feared he had softening of the brain. This condition was said to have existed several weeks, and was believed to be due possibly to anxiety about his sick children. He began to have attacks as of fainting, but did not lose consciousness; he would point to the medicine which he wished to take, but would indicate that he could not speak. He lost power to use the tongue freely, and particularly to recall words to express his ideas. The epileptiform attacks grew in frequency and severity, and after three months typical attacks of epilepsy, with convulsion and loss of consciousness, developed, finally assuming the grand mal type, and ending with death. He had never had impure connection, but was reported to have had a suspicious and intractable ulcer on the lip, which, however, finally healed before he came under Dr. Parsons' care. He also had an eruption of the scalp and on the arm. The administration of the iodides appeared to produce marked amelioration of all the symptoms, but it was only temporary. Bichloride was also employed among other measures.

The lesson which the case taught was the probability that thorough treatment instituted at the time of development of the first symptoms would have averted the cerebral affection.

DR. NATHAN S. ROBERTS then read a paper entitled,

THE TREATMENT OF DISEASES OF THE NOSE BY THE GENERAL PRACTITIONER,

in which he called attention more particularly to the nasal affections which it was possible for the general practitioner to treat with success after a moderate amount of training, yet which, if neglected, might prove most distressing locally, or by reflex influence cause asthma, headache, disease of the ear, of the larynx, etc. The skill required in the use of the nasal speculum and rhinoscopic mirror for diagnostic purposes could readily be acquired by any practitioner, and would lead to the use of such means as might be necessary in the removal of polypi, hypertrophied tissue on the turbinated bone, hypertrophic rhinitis, etc. The use of astringents, when not too strong, or too long continued when employed weak, could be safely entrusted in the general practitioner's hand. A cleansing fluid would prove of marked benefit in many distressing cases now left untreated, because the patients hesitated to visit a specialist.

A PLEA FOR THE ACTIVE TREATMENT OF PUERPERAL ENDOMETRITIS BY MEANS OF THE CURETTE.

DR. EGBERT H. GRANDIN opened his paper with some remarks on the extreme conservatism with which physicians regarded novelties in obstetrics, while in certain other departments of medicine, as gynecology, they accepted proposed changes with almost undue haste. Yet every day should add to the knowledge of the obstetrician if he watched his cases carefully, and sooner or later he would become convinced that a part of his earlier conservative training was faulty. Indeed, he might attain to that stage when he would admit that judicious meddlesomeness in midwifery was good. In this spirit he entered upon a plea for a method which, while not strictly novel, did not by any means represent universal practice, and by some might be charged as verging on the meddlesome. After labor the hypertrophied organs had to undergo a retrograde metamorphosis, which took place through a fatty change in the newly formed elements. The cavity of the uterus contained more or less blood-clots, the venous cavities were filled by thrombi, the interior surface resembled a false membrane which had to separate and be expelled. The site of the placenta in particular was rough, jagged, due in great part to thrombi which occluded the sinuses. In brief, the interior of the uterus after delivery resembled a large surgical wound, except that it was physiological. As long as the process remained physiological the vast degenerative and regenerative changes took place without any disturbance of health. But if the normal process were arrested, the elements which were about to be cast off became necrotic. This so-called puerperal degeneration might begin in any part of the endometrium, although it usually started from the placental site and extended until it involved the whole endometrium. During the time taken in the expulsion of the decaying mass the blood might carry a part of it into the system.

Such was a general view of the local pathological phenomena of puerperal endometritis. When the surgeon, after an amputation, found the wounded surface not covered by healthy granulations, he got rid as soon as possible of the offending slough, to obviate its involving deeper tissues and poisoning the system. Nor was he satisfied simply with washing the wound with hot water or sprinkling on of iodoform.

It was not necessary to inquire at present whether the prevailing theory of the origin of puerperal septicæmia was the correct one, namely, that it was due to a germ. It was sufficient for present purposes to state that in the vast majority of instances the septic process was localized at the outset. Hence the necessity for attacking it early, before the lymphatics and the blood-vessels had carried it beyond reach. Fortunately for the woman the symptomatology gave an early clew to puerperal endometritis; yet the obstetrician required for his patient's safety the use of all his senses. Then, again, before the pulse, temperature, general aspect, or change in lochia indicated trouble, the nose would detect beginning decomposition in the lochia. This fact, when existing, should awaken suspicion.

The treatment was prophylactic and local. He would not say that, owing to modern asepsis, puerperal endometritis could always be prevented, but it should be reduced to a minimum. The lying-in woman should be surrounded by a condition of asepsis during and after labor, the uterus should be entirely emptied, and due contraction secured at the end of labor. He would not say that placental remnants or shreds of membrane left in the uterus would necessarily prove a source of asepsis, but they might; and, if the accoucheur was not satisfied of their complete removal, he should resort to such manipulations as would bring them away. Those manipulations should be followed by one uterine douche. If it was a good principle to keep out germs, it was a better one to leave nothing in the uterus which would afford fertile soil for their development. But suppose endometritis had developed, what should be done? He believed the majority of accoucheurs, the world over, were wedded to the intra-uterine douche.

This douching was done with greater or less frequency, according to the notion of the accoucheur, some resorting to it every third hour, some every hour, or second hour, and others at longer intervals, and continuing it perhaps several days.

In mild cases one to three douches might suffice to check the septic process; but, in the majority of instances, it had to be continued with greater or less frequency for days, and occasionally longer than a week; corrosive sublimate was usually employed, $\frac{1}{1000}$ to $\frac{1}{2000}$. Some followed it by introducing an iodoform pencil. Such was a fair statement of ordinary practice.

Some objections to the method were the following: The douche had frequently to be repeated for days, and might then prove inefficient; the antiseptic agent might prove toxic; there might be reintroduction of septic matter. The use of corrosive sublimate had been forbidden in some of the European institutions because of its dangers. Dr. Grandin had not employed it in the intra-uterine douche for two years.

Was there no method which would render unnecessary repeated douchings? It was his belief the dull curette would often replace the douche, and at the same time answer all the indications. The indications were to remove all particles from the uterus which were undergoing decomposition, whether partially loose, partially adherent to the superfices, or extending to the muscularis. Timely action was important; for at the outset the septic process was limited to the cavity of the organ. The dull curette was harmless when used with care, as every instrument should be. The practitioner should be as competent to use it as to use the forceps or the irrigation tube.

As soon as fetor of the lochia appeared, he proceeded to carefully differentiate its source. It was sufficient to state that a thorough vaginal douching with boiled water or antiseptic solution would cause the fetor to disappear in case it were from the vagina. If after a few hours it reappeared, he administered at once an intra-uterine douche, which might entirely remove it if it were due to a loose clot. If it returned, he instituted active treatment; placed the patient in Sims' position, inserted the speculum, fixed the cervix with the tenaculum, introduced the curette bent to the correct degree, thoroughly scraped the interior of the uterus, and gave another douche. Frequently the condition of the patient would so improve within twenty-four hours that she would hardly be recognized.

The fact could not be emphasized too strongly, when the question of danger from the curette was raised; that in cases calling for its use, or that of the douche, the cervical canal was open, and the instrument found its own

way, as it were, into the womb. Still the timid might use the Doléris brush, which entailed no danger. The disturbance of the patient was little greater than during the use of the douche, which latter had frequently to be repeated, and would probably leave a nidus for still further septic absorption.

DR. J. E. JANVRIN thought the paper was eminently practical, and that the points made would meet with the approbation of almost all obstetricians. His own experience in obstetrics had been such that he had never found it necessary to use the curette. He had, however, repeatedly employed the douche, though not for a long time in any one case. He had used it for two or three days at intervals of two or three hours. In many cases of abortion with retention of the after-birth, he had resorted to the dull curette, although septic symptoms may not have set in. The curette was followed by a warm carbolized douche, and there had been no further trouble. He thought the dull curette was harmless in any physician's hands. He had never had toxic symptoms follow the bichloride douche, which he had employed frequently.

DR. A. F. CURRIER did not agree with the author that obstetrics was not a thoroughly progressive science and art, and mentioned improvements which had come to stay, such as Tarnier's treatment of the prematurely born, Sänger's improved Cæsarean section, the primary operation on the ruptured perineum, etc.

Dr. Currier objected to general use of the intra-uterine douche after labor; it was called for exceptionally only. Afterward, if the temperature rose, it should be resorted to. If three or four douches at the most did not prove effectual, he would employ the curette. Recently a prominent young French specialist recommended the use of the curette in all cases after labor. This was going to the extreme.

DR. ROBERT A. MURRAY was quite in accord with Dr. Grandin. If, after thorough cleansing of the vagina, the finger brought in contact with the cervix had a fetid odor it pointed to the uterus as the seat of the trouble. He preceded the curette with the finger, which was better in diagnosis, and gave a sense of the direction of the cavity. Except in abortion it could be introduced without force. In the Maternity Hospital they now saved lives by employing the curette where death not infrequently resulted formerly from continued use of the douche. Pelvic peritonitis, septicæmia, and abscess were aborted by the curette. He saw patients every day in whom removal of the tubes and ovaries seemed necessary, yet their condition might have been avoided by timely use of the curette during a puerperal endometritis. He employed a long curette, the handle being continuous with the head. He preferred to have the patient on the back. If the curetting was effectual the fall in temperature would prove permanent; but if the douche alone were used, and the foreign body were not brought away, there might at first be a fall, but it would be followed by a rise of temperature.

DR. MALCOLM MCLEAN sent a note, stating that he believed in the careful but thorough use of the blunt curette, followed by wiping out the uterus with cotton attached firmly to an applicator, pressed dry after being saturated with a ninety per cent. solution of carbolic acid.

DR. A. M. JACOBUS was in accord with the views expressed in the paper. He preferred the dorsal position during the curetting. In early abortions he used the polyp forceps. If the operation were postponed, the curette would be required.

DR. J. LEE MORRILL said the practice outlined in the paper had been that which he had followed for some time; that was, in cases of sepsis in the puerperal woman he washed out the uterus a number of times, and not being able to reduce the temperature he then resorted to the dull curette. A diagnostic point related to the patency of the internal os. When the lochia became offensive, and he found the internal os open, it was his practice to enter the uterus and clear it of any remaining placenta, membranes, or clots. If he could not wash it out by irrigation or remove it with his finger, he invariably resorted to the curette. He had never had occasion to regret this practice.

Dr. D. P. Austin related a case which showed that he was in accord with the author, while Dr. Messenger, by careful employment of prophylactic measures, had been able to avoid the necessity for the use of the curette. Dr. Grandin closed the discussion.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE DISPOSAL OF THE DEAD—THE ABSOLUTE SIGNS OF DEATH—DISCUSSION AT THE MEDICAL AND CHIRURGICAL SOCIETY ON EARLY EXCISION IN TUBERCULAR DISEASE OF THE HIP-JOINT—DOES THE LOCAL USE OF GLYCERINE INCREASE THE VAGINAL SECRETIONS?—A PICTORIAL MUSEUM FOR THE COLLEGE OF SURGEONS.

LONDON, December 17, 1888.

DURING the last few years considerable attention has been directed to the subject of the disposal of the dead. The ordinary methods of burial have long been denounced by sanitarians, who advocate as preferable either "earth-to-earth" burial or cremation, the partisans of the two methods being about equally numerous. The question is one which is beginning to interest the public to no little extent. The fear of living burial is also certainly as active as ever, and, as a safeguard against this, the opinion of an expert is sometimes sought to decide as to death having actually occurred. It is, therefore, not at all surprising that Dr. Richardson's paper at the Medical Society last Monday should have evoked considerable interest. He took for his subject "The Absolute Signs of Death." On two occasions, he said, had he been called in to give a skilled opinion as to the fact of death. He enumerated and discussed the following proofs of death, viz., respiratory failure, cardiac failure, reduction of temperature, rigor mortis, and muscular collapse, coagulation of blood in the veins, putrefactive decomposition, absence of red color in semi-transparent parts viewed with a powerful light, absence of muscular contraction under the stimulus of an electric or galvanic current, absence of a red blotch on the skin after the subcutaneous injection of ammonia, absence of signs of rust (oxidation) on a bright steel needle after plunging it deeply into the tissues.

An important topic was discussed at the last meeting of the Medical and Chirurgical Society, viz., the treatment of tubercular disease of the hip-joint. Mr. Barker read a paper in which he urged that at a certain stage of the disease the complete removal of the tubercular tissue ought to be possible. When treatment by rest had failed he would perform excision. He maintained that in many cases the wound ought to heal by first intention throughout, and often without drainage. He then related a case which he had successfully treated. The patient was a boy, five years of age, who had been under careful treatment for a year. The head of the femur was destroyed and an abscess of the usual kind had formed. Excision was performed, and primary union took place, without drainage, under one dressing. The patient left hospital on the fourteenth day, wearing a double Thomas' splint.

Mr. Bilton Pollard followed with a paper on the same subject, in which he laid down the principle that the wounds necessarily caused by extirpating tubercle from joints would heal as rapidly and as permanently as other wounds of a similar size if certain essential conditions were secured, viz., complete removal of the tubercular growth, perfect asepsis, bleeding checked and the wound made as dry as possible, oozing checked by the even elastic support or a wool dressing and a moderately tight

bandage, absolute rest during the process of healing. Mr. Pollard referred to four cases of advanced hip-joint disease, with caseous abscesses, on which he had operated. In three cases he employed the anterior incision, and in the fourth a curved incision round the upper and posterior part of the trochanter. In none of the cases were drainage-tubes employed. The dressings were changed on the seventh day after the operations, and the wounds were found to have healed by first intention throughout. With the exception of one case, in which the acetabulum was perforated, there had been no recurrence of the disease.

Mr. Croft congratulated the authors of the papers, and said the success of this treatment might be said to mark an epoch in the surgery of the hip-joint. He referred to the practice in vogue seventeen or eighteen years ago. No operations were then performed until the last stage, and the results were disappointing. In 1880 he had given an account to the Clinical Society of forty-five cases in which he had excised the hip-joint, with a mortality of thirty-five per cent. General opinion then was decidedly against early excision, and a committee of the Society reported that it was undesirable to excise the joint unless there was dislocation or sinus. He had continued his own practice of early excision, and since then had had fifty-three operations, with a mortality of only fifteen per cent. These figures caused some misconception to subsequent speakers, and at a later period of the evening Mr. Croft explained that in reference to this mortality of fifteen per cent. he did not mean to say that these deaths had been in consequence of the operation. With one exception these deaths had all been due to tubercular disease at some time subsequent. Mr. Bryant remarked that more evidence was wanted before it could be decided that there must be operation in hip-joint disease at an early stage. He was still in favor of expectant treatment in the great bulk of cases.

Mr. Hulke observed that many cases, if treated with rest in the early stage, would recover without excision, and those which recovered in that way gained stronger limbs and were more fit for work than cases of excision. When cases were spoken of as healing in a few weeks, he supposed the external wound was all that could be referred to, as there would be no complete bony union. He was pleased to hear that Mr. Pollard and Mr. Barker had been able to get out the synovial membrane through an anterior incision; he should have thought it impossible. The operation by anterior incision was no new thing. It was introduced by Hüter, who combined it with a drainage-tube at the back of the joint.

Mr. Howard Marsh said he had never seen such good results as in the cases they had before them. The operations were not quite new; they had all seen a tubercular joint heal quickly after incision. The most important question was not the best way of obtaining primary union, but the ultimate conditions of the limb. The difficult point to decide was what condition could be reached by long rest at first and good nutrition, as compared with early excision. It must be remembered that some evidence was accumulating against the permanence of tubercular disease.

Mr. Keetley referred to a case in which he had excised a diseased hip-joint and scraped out the morbid surrounding tissues. The patient had done very well for six weeks and had then died suddenly from tubercular meningitis. Post mortem, the head of the femur was found firmly joined to the acetabulum, and hardly any trace of cicatricial tissue left. Mr. Keetley said that he regarded the use of the drainage-tube as a safeguard against the mistakes in antiseptic treatment into which we might fall. If all the morbid tissues had not been removed, the drainage-tube would be of use in lessening the chance of self-infection. It did not in the least prevent early convalescence; patients might be up in a fortnight and going about on crutches without being any the worse for a drainage-tube.

Mr. G. A. Wright, of Manchester, then spoke by invitation of the President, and said he had had considerable opportunities for watching the results of hip disease among the tuberculous population of Manchester. Out of the last eight hundred cases he had seen he had performed excision in 135. He thought the best results would be obtained from rest if the cases were taken in time, but the qualifying clause rendered the maxim unpractical. He had never seen better cases than those shown him that evening. He used drainage-tubes himself, and did not get the operation-wounds healed so quickly. The great difficulty was the entire removal of the morbid tissues. He thought tuberculous foci were generally present in the bone, the ligaments, and the synovial membrane, and he had hitherto found himself entirely unable, either by the anterior or the posterior incision, to completely remove these foci. Mr. Wright said he was accustomed, even after excision, to keep on a Thomas' splint for a year, for without it patients were liable to many dangers.

Mr. Makins said that he was at Halle in 1879, and Volkmann was then performing many excisions in cases of early tubercular disease of the hip-joint. In 1887, however, he found that Volkmann had given up the practice in consequence of the ultimate results proving unsatisfactory.

Mr. Barker then replied. He said the first question was, What was early hip disease? He did not wish to excise the joint till he had given up all hope of curing it otherwise; but his case had had rest for a year before the operation, abscesses had formed, and when the joint was laid open it was in advanced disease, and the head of the bone carious throughout. He was in favor of using a Thomas' splint for months after the operation; it had been removed in his case by the boy's parents by mistake.

Mr. Pollard said he considered his cases were progressing toward the third stage; there had been carious bone and abscesses just going to break through the skin. He would not excise if the cases could be got well without.

Does the local use of glycerine increase the amount of secretion poured into the vagina? Many gynecologists aver that it does. Dr. Herman read a paper on the subject at the last meeting of the Obstetrical Society, and as the result of some experiments enunciated the following conclusions, viz.: 1. That when the secretions poured into the vagina are not abundant the local use of glycerine increases them. 2. That when the secretions are already abundant the local use of glycerine does not increase them. In reply to an observation from Dr. Griffith, who said it was important to make sure whether the secretions were formed in the vagina or merely retained in that canal, Dr. Herman said he could not tell whether they were of uterine or of vaginal origin, and he would be obliged if Dr. Griffith could suggest any harmless method of separating the excretions of the uterus from those of the vagina.

The College of Surgeons seem fully alive to the advantages of forming a pictorial museum of disease on the lines suggested by Mr. Hutchinson in his recent Bradshaw lecture. It is announced that they will be glad to receive copies of illustrated monographs, atlases of illustration, and original drawings or proofs of engravings and woodcuts—the latter to be accompanied by references, and, if possible, by description. Adopting a recommendation of the Museum Committee, the Council have also engaged Mr. Burgess, the well-known pathological artist, for a period of three months.

A WORD FOR ICE-WATER, TOO.

To the Editor of The Medical Record.

Sir: Your kind remarks entitled "A Plea for Indigestible Food," encourage me to add a word in regard to drinks. My morning paper contains a prominent review of a popular book, entitled "The Relation of Alimentation and Disease." The author of the book is described as the

"inventor of hot water as a beverage in medicine." The review attributes great injury to the use of ice-water, and a corresponding benefit to be derived from the systematic drinking of hot water during months and years.

In the face of such assertions it is a curious fact that Dr. Dujardin-Beaumetz, when desiring a specimen of gastric juice, first gives to the patient a half glass of cold water. The habit of drinking ice-water before meals is so widely deprecated that it will perhaps be a gratification to some of us to be able to defend it by this eminent example. Cold water apparently stimulates gastric secretion. It does this most probably by dilating the smaller arteries so as to increase the supply of blood. Cold water applied to the skin causes a temporary pallor, rapidly succeeded by flushing and warmth. The dilatation thus obtained is not temporary, but persists for a considerable time. Heat, on the contrary, when applied to the skin, reddens the part temporarily, but finally produces pallor and anæmia. Hot water is better than cold water for the control of hemorrhage, because it produces a final and more lasting contraction of the arteries of the part. Brugio, an Italian, recently observing the brain through the trepanned skull, has found that cold baths produce anæmia, while hot baths produce hyperæmia of this organ.

There is no reason to suppose that heat acts differently upon the mucous membrane of the stomach than it does upon the mucous membrane of the uterus or upon the skin. A hot drink will flush the face as a cold drink never does. The writer has known plethoric people who were obliged to abstain from hot drinks entirely on account of this flushing, and the headache and discomfort which accompanied it. Apoplectic subjects are directed to avoid hot drinks. On the other hand, we administer hot drinks to the patient in a chill because "they drive the blood to the skin," and old-fashioned mothers give hot teas in the eruptive fevers because "they keep the rash out." These instances all point to contraction in the vessels douched by the hot fluid. Pallor of the mucous membrane of the digestive tract undoubtedly follows the use of hot drinks. Hot water sometimes cures dyspepsia, for the reason that in catarrh of the stomach, as in other inflammations, we have unnaturally dilated vessels and sluggish circulation, or even stagnation, of the blood. Contraction is here, as in hyperæmia elsewhere, the first step toward cure. By contraction of the smaller arteries we get a pushing onward of the stagnant venous blood and, in consequence, room for a fresh supply. In catarrh of the stomach, therefore, hot drinks may favor secretion and the better digestion of food.

In the primitive state, however, hot drinks were of course unknown. The animals, in winter, drink from a hole in the ice, and children do not care for hot drinks until they have been taught to use them.

A conclusion to be drawn is, not to introduce children to this practice of a retrograde civilization too early. The child's digestion is not benefited by hot drinks so long as he is in a normal state. Another conclusion is, not to smile superciliously upon your friend because he thinks that a half-glass of ice-water before eating gives him a relish for his food. A third conclusion relates to milk diet. Where milk cannot be taken because it coagulates in lumps, try giving it lukewarm or hot. Ice-cold milk provokes secretion just as ice-cold water does, and this sudden outpouring of the gastric juice coagulates the whole quantity in a mass. By giving the milk hot, on the contrary, secretion is delayed, coagulation occurs more slowly, and a flaky curd is the result. Many people who cannot take cold milk with any comfort, can take hot milk, or milk as it comes from the cow, in large amounts. A fourth conclusion refers to the hot water. While the douching of the digestive tract with hot water may be beneficial for a time, if persisted in after the normal circulatory equilibrium has been reached, it will invariably do harm and may, it is said, even set up a condition of anæmia and atrophy of the stomach—a condition far more serious than the hyperæmia it was intended to combat. It should therefore not be continued for months nor for years, as the popular author before referred to has recommended. As a remedy hot water is not harmless, and its administration should be controlled by the physician's directions just as certainly as the use of drugs.

A last conclusion refers to cerebral hyperæmia. In the condition of flushed face and mental confusion which sometimes results from worry or overwork, try an ice-cream, if it can be digested. If not, try a water-ice, or even a half-glass of the despised ice water. The tranquillizing effect of the cold drink has not yet perhaps received its due share of attention. The possible agency of the hot drink in the production of "American nervousness" is also suggested. It is, perhaps, a significant fact that in the countries with which we are oftenest in this respect compared, chilled wines or malt liquors are more commonly employed. On the other hand, the reviving effect of hot water and other hot drinks in conditions of cerebral anæmia cannot be denied. Any dictum which unqualifyingly says that cold drinks are good, and hot drinks are bad, or that hot drinks are good and cold drinks are bad, must be absurd. Both are good in their place. In the opinion of the writer, however, the cold drink is a physiological requirement, while the hot drink has its place in the treatment of pathological conditions alone.

SARAH E. POST, M.D.

13 WEST FORTY-SECOND STREET,
January 3, 1889.

PROTECTION FOR AMERICAN PHYSICIANS.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: You have sounded the proper alarm in an editorial in THE RECORD of December 29, 1888. There is no more flagrant outrage on the medical profession of America than the wholesale emigration of medical mountebanks from the other side of the Atlantic. To my personal knowledge I know not less than six Germans from the "old country," who have not the slightest training in the fundamental principles of medicine, as anatomy, physiology, pathology, or chemistry, but they hang out a "shingle" as Dr. G——,—most of them as Dr. G——, homœopathic, etc.; all doing more or less business, but, as they say, "an Sheeper Blan," from fifty to seventy-five per cent. less than the regular, educated American physician. I am heartily in favor of separating the licensing power from the educational. We need this reform in this as much or more than any State in the Union.

C. E. BEARDSLEY, M.D.

OTTAWA, O.

PROTECTION AND CANADA.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Your editorial on "Protection for American Physicians" is timely and good. Here, on the Canadian border, the Canadian physicians have a perfect right, as far as the law goes, to infringe on American territory, while we dare not attempt to force collection of a bill contracted "just over the line" one mile away. Nor can we settle there without going through a process, unless we happen to be graduates of one or two especially favored American colleges. But they come over here in droves, and McGill men, judging by their practice, show no more erudition or special ability than we ordinary mortals.

F. L. LADUE, M.D.

ALBURGH SPRINGS, VT.

WAS IT METASTATIC RHEUMATIC PERITONITIS?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Dr. Packard's question in your issue of December 29, 1888, reminds me of a case that fell to my lot, in the pre-Adamite days before salicylic acid and hypodermic syringes.

B——, a boy about fifteen years of age, had been engaged, in very raw weather, energetically pursuing the wild duck and other game in the swamps along the Calumet River. He awoke next morning in great pain, with a high fever. I found him suffering with painful swelling of the left elbow, wrist, and finger-joints, and of the right knee. All went well for two days, when every evidence of disease vanished from the extremities, and the entire abdominal region became the seat of most excruciating suffering. The whole belly became tense, distended, and painful. Opiates gave no appreciable relief, though exhibited in quantity sufficient to contract the pupils and to retard respiration. It became necessary to resort to the inhalations of chloroform; but even then the patient could not take enough to keep him from groaning, though in other respects appearing to be completely narcotized. Death occurred after five days of horrible agony. Unfortunately, no autopsy could be obtained.

Several times since then I have seen cases of rheumatism involving the muscular walls of the abdomen, but never anything else that so thoroughly merited the title of rheumatic peritonitis.

HENRY M. LYMAN, M.D.

CHICAGO, ILL., January 1, 1889.

A FATAL CASE OF RHEUMATIC PERITONITIS.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: I saw, in the issue of THE MEDICAL RECORD for December 29th, a paper by Dr. Packard describing a case of metastatic rheumatic peritonitis. Dr. Packard has never, he says, seen a fatal case. I have seen one. The case was as follows: I was called as consultant with a gentleman, some years ago, to see a lady who had been delivered by him ten days previously. The medical gentleman, whose name I cannot unfortunately remember, gave the following history: The patient did well until the fourth day, when she was seized with a severe attack of acute rheumatism in both wrists. The seizure invaded almost all the joints until, finally, two days before I saw her, she developed acute peritonitis, the joints becoming much better. In spite of all the doctor could do, the patient died a day or so after I saw her. There were no signs of any septic trouble due to the confinement—the lochia being at all time sweet and free, the womb itself free from tenderness, no chills, etc. The doctor reported the case, but I have forgotten where it was published.

Truly yours,

MARTIN BURKE, M.D.

147 LEXINGTON AVENUE.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 30, 1888, to January 5, 1889.

WATERS, WILLIAM E., Major and Surgeon. Leave of absence granted in S. O., 129, November 9, 1888, Department of the Columbia, is extended one month. Par. 9, S. O. 2, A. G. O., January 3, 1889.

AINSWORTH, FRED. C., Captain and Assistant Surgeon. By direction of the Acting Secretary of War, to proceed to New York City, N. Y., and Brooklyn, N. Y., on business connected with the Medical Department. Par 20, S. O. 302, A. G. O., Washington, December 29 1888.

FECUNDITY AND AGE.—A woman in Edinburgh, Scotland, is reported pregnant at the age of sixty-two, it being her twenty-third time. She was also pregnant at the ages of forty-seven, forty-nine, fifty-one, fifty-three, fifty-six, and sixty.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending January 5, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	19	8
Scarlet fever	274	43
Cerebro-spinal meningitis	5	4
Measles	477	27
Diphtheria	169	46
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

TREATMENT OF FETID DIARRHŒA.—The following formulæ are suggested in the *Bulletin Médical* for this condition:

℞. Bismuthi salicylat.,
Magnesiæ calcinat.,
Cretæ præparat.,
Calcis phosphat. ..... āā ʒ ijss.
M. Rub to a smooth powder.
M. DOSE.—Half a teaspoonful taken daily.

Also give an enema of:

℞. Bismuth. salicylat. ..... ʒ ijss.
Acid. salicylic ..... gr. xv.
Aquæ bullient. ..... fʒ v.
M. To which add a strengthening diet.

Another plan of treatment is the following:

℞. Naphthalin. pur.,
Sacchari ..... āā ʒ j.—gr. xv.
Essent. bergamot ..... gtt. i.–ij.
M. Rub to a smooth powder and divide into twenty powders, of which take one every hour.

Use with this also the following enema:

℞. Naphthol ..... gr. xxx.
Alcohol ..... fʒ jss.
Dissolve, and add of distilled or boiled water a pint.

Formulæ for injection brou.

℞. Opii,
Catechu. ..... āā gr. vjiss.
Croci. ..... gr. xv.
Aquæ, ... q. s.
Fiat liq. q. s. ad. ..... fʒ ij. fʒ ij.
et adde
Plumbi subacet. ..... gr. xxijss.
Zinci sulphat. ..... gr. xlv.

POISONING BY OIL OF SASSAFRAS.—Dr. Albright reports this case in the *Cincinnati Lancet-Clinic*, December 8, 1888: A German, aged eighteen years, took by mistake a teaspoonful of oil of sassafras and went to the barn to work. He noticed in a few minutes strange feelings about the head. In half an hour hallucinations (declared he was in heaven) and occasional vomiting. Half hour later unconscious; vomiting continued when disturbed or on any exertion, followed by great prostration and relaxation. Two hours after taking, the extremities cold; radial pulse detected with difficulty. Continued in this way until about 6 P.M., the drug having been taken at 2 P.M. At this time the doctor found him with pupils somewhat dilated; pulse at wrist barely perceptible; respiration twelve per minute; extremities cold. Could be roused with difficulty, but incapable of comprehending or answering questions or of recognizing anyone. On attempting to administer some egg albumen he vomited again. The writer could detect barely a trace of the odor of the oil, and concluded it was mostly ejected from the stomach. The vomited matter contained abundance of very tenacious mucus. Concluding that the violence of the storm had passed, he was ordered quiet, with heat to extremities, and stimulants. He regained complete consciousness by midnight, and was ready for breakfast in the morning, and with the exception of feeling a "little weak" made no further complaint.

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Original Articles.

THE MENOPAUSE IN SOME OF ITS RELATIONS TO DISEASE.[1]

BY JAMES B. HUNTER, M.D.,

SURGEON TO THE WOMAN'S HOSPITAL OF THE STATE OF NEW YORK.

THE menopause is an event in the life of woman interesting alike to the general practitioner and the gynecologist. It is an event which may be said to occupy a place on the border line between the physiological and pathological processes, passing readily from one to the other. The purpose of this paper is to consider very briefly some of the variations from the normal type of the event known as the "change of life," and to point out the danger of overlooking diseased conditions when they happen to be coincident or complicated with that change. The subject is rendered somewhat difficult to treat concisely from the wide difference that exists in regard to the age at which the menopause occurs, and the manner in which it is heralded and established.

As to the age at which it occurs, there is a difference of many years; but, as a rule, it takes place between forty-five and fifty. In exceptional cases it may occur as early as twenty-five, or later than sixty, without evidence of any appreciable disease, and without any disturbance to the general health. Such exceptions are so rare that any marked peculiarity as to age should excite suspicion and inquiry, especially if accompanied by any distressing or alarming symptoms. It may be remarked in passing, that whereas there is a wide range of difference in the age at which senility occurs, there is a very limited and narrow range of difference in the age at which puberty declares itself—and that also may be regarded as a "change of life"—the only change which can be compared or contrasted with the one under consideration, the one being a process of evolution, the other one of involution.

The menopause may occur early from the following among other causes: 1, Heredity; 2, anæmia; 3, excessive child-bearing; 4, superinvolution of the uterus; 5, ovarian disease or disease of the tubes; 6, shock or other psychical cause.

The menopause may be delayed beyond the average age by the following causes: 1, Heredity; 2, the hemorrhagic diathesis; 3, cardiac disease; 4, subinvolution; 5, fibromata of the uterus; 6, sexual excess; 7, metritis or endometritis; 8, chronic displacement of the uterus; 9, ovarian disease; 10, plethora; 11, intra-uterine growths.

It is necessary to distinguish between uterine hemorrhage or flow—which may occur from many other causes besides those mentioned—and the regular recurrence of the menstrual discharge. The climacteric is not merely a local change, but something more. It means a profound general constitutional revolution. Among the local changes which take place may be noted:

1. The atrophy and growth of fibrous tissue in the stroma of the ovaries, at the expense of the Graafian vesicles.

2. Atrophic change in the mucous membrane and glands of the uterus, with increase in fibrous tissue.

3. Atrophy of the vagina and external genitals.

4. Diminished blood-supply of the pelvic organs.

[1] A paper read at a meeting of the Practitioners' Society, December 7, 1888.

Preceding these changes, as a sort of rebellion against their approach, there is often an exaggeration of all the normal conditions, with increased vascularity and corresponding nervous phenomena. At this period there is an undue strain on all the pelvic organs, and latent diseases often receive a stimulus that declares itself in unwonted symptoms. This is the period when neglected lacerations of the cervix uteri are apt to become evident. It is the period when malignant diseases of the pelvic organs often develop, or, if previously existing, assume an aggravated form, and take on a rapid growth. It is the period at which hereditary traits, especially insanity, are prone to appear. There is a general impression that Bright's disease—diabetes—and many other diseases are more liable to occur at this time than at any other; and hence, probably, the popular dread among women of the "change," as of a dangerous river to be crossed in the journey of life.

The preliminary period spoken of may be either brief or long. In some women it occurs as a warning, after which normal menstruation is restored for a time, perhaps for many months, when the warning again returns. These oscillations may be repeated several times. The preliminary period is one of heightened arterial tension and marked disturbance of the circulation. The condition may be observed and studied well in the cases, now perhaps too common, when the menopause is established prematurely by the removal of the ovaries and tubes. One of the symptoms almost always present, often for a year or more after operation, is the frequent painful flushing of the face, which occurs sometimes several times a day, sometimes accompanied by a slight vertigo.

The local disorders due to the approach of the menopause are of exceeding practical interest. It is not always easy, it is sometimes impossible, to distinguish between the symptoms due to this cause and those due to causes entirely independent of age. In one case it may be prudent to interfere as little as possible; in the other, active interference may be imperatively demanded. The history of the patient and the nature of the symptoms will decide as to the necessity for a physical examination, which will often make the diagnosis easy. Where the symptoms are not urgent, time will often clear up all difficulties. The symptoms most likely to be present in doubtful cases are:

HEMORRHAGE.—This is always alarming if severe or long continued, and may be due to so many causes that it is often perplexing in the extreme. Cases occur to which not even the most careful physical examination will give the slightest clue, if the congestion of the menopause is not taken into account. Due weight must be given to the fact that a patient may be suffering from disorders attributable to her age, *plus* some organic disease. Uterine fibroids are a common cause of hemorrhage and of menorrhagia, and although after the menopause this class of tumors usually give little trouble, it must not be forgotten that they may postpone the change for several years, and often do so. Of this fact we have abundant clinical evidence in subjects of fibroid tumors who are advised to wait for the "change of life" in order to avoid surgical interference. Women who would otherwise probably cease to menstruate at forty-five often continue to flow till fifty, when there is a large fibroma attached to the uterus. I have seen several cases where the existence of a fibroid tumor for years caused no menorrhagia until the age when the menopause should take place. In women

whose menstruation has been regular and not excessive, a marked increase in the flow, coming on after forty, and persisting for several months, is always to be regarded with suspicion, especially if the discharge has become more watery, has an offensive odor, and is complained of as acrid and irritating. In such cases no time should be lost in making a physical examination. Epithelioma of the cervix, which may have been progressing slowly for many months, without any symptoms, often receives a sudden stimulus at the advent of the menopause, and is first discovered only after it has made astonishing progress. It is a grave error, in the presence of the symptoms described, and at the critical age, to trust to nature and time for relief. The rapidity of growth of which cancer of the cervix uteri is capable at that period of life is almost incredible, and justifies the use of every means to make a positive and early diagnosis.

Hemorrhage caused by a small pediculated polypus within the uterus may easily be mistaken for that due to a sloughing cancer of the cervix, even the odor resembling that of cancer. Such polypi often hang by a slender pedicle and become fixed in the canal of the cervix, the exposed portion breaking down, and having almost exactly the appearance of a malignant growth. A menorrhagia which occurs with comparative regularity every month, and which is limited in time, is less to be dreaded than a flow, even slight, that lasts the greater part of the month. There is a rare form of senile metritis which is accompanied by a constant oozing, and often by pruritus vulvæ, which simulates very nearly the flow that takes place in either cancer or sarcoma of the body of the uterus, but it has not usually the offensive odor of the discharge in malignant disease. A form of bleeding in which the discharge is dark and tarry, sometimes alternating with discharges of offensive pus, usually signifies degenerative changes in the tubes and ovaries. A flow of bright red blood, occurring in gushes, may signify ulcerative lesions of the endometrium, to which there is a greater liability near the menopause than at any other time.

Closely allied to hemorrhages are the various discharges from the vagina which occur toward the close of the menstrual age. The serous flow, often profuse, in cases of epithelioma of the cervix, is a marked feature of that disease, which may run its entire course without the occurrence of any hemorrhage whatever. A somewhat similar watery discharge sometimes occurs from the cavity of the uterus in senile endometritis, and may cause an error in diagnosis if physical examination is neglected. A watery or sanious discharge, caused by an intra-uterine polypus or fibroid tumor, may simulate the discharge of epithelioma so closely as to render diagnosis impossible without dilatation and exploration of the uterus. That procedure is to be recommended in every doubtful case. One point I wish to emphasize is the greater necessity for careful, thorough examination at the critical period of life than at any other period, because of the rapidity with which changes then take place, when there is a temporary stimulus to the circulation and a deranged condition of the nervous system.

Nervous and Other Symptoms. — For the same reason, because it is the *temps critique*, I believe that greater, and not less, attention should be given to all nervous and other symptoms, which are too often ascribed simply to hysteria. Melancholia, profound depression, the disposition to exaggerate the every-day cares of life, should be watched with care and sympathy, especially if there is any trace of insanity in the family history. The morbid dread of cancer, from which so many women suffer all their lives, is particularly active at this period, and the subjective uterine symptoms often give some ground for apprehension. Such fears can best be allayed by making sure that there is no real cause for alarm.

Pain is not commonly a prominent feature in the disorders of the menopause, but in cases of previous pelvic peritonitis, with adhesions, very severe pain is often experienced during the congestive period. Pain from this cause may be expected to disappear when the menopause is fully established.

I have endeavored to show that the most serious period in a woman's life is that preceding the establishment of the menopause, and would again express the opinion that while the menopause has its own decided influence on the mental and physical health, and has its own train of symptoms and disorders, that the radical and profound change which it implies includes and influences all other diseases to which she is liable at that period of her life.

My attention has been directed to this subject quite recently by the care of two cases, neither of which had been suspected of anything more than the irregularity commonly ascribed to the approach of the climacteric. One patient proved on examination to have a well-developed sarcoma of the body of the uterus, and was treated by extirpation of the entire organ by the vagina. She made a good recovery. The other case had such slight symptoms that no examination had been thought necessary until, when she came under my notice, the vagina was found literally filled by a cauliflower growth originating on the cervix. This experience is not unique. On the contrary, it is lamentably common. By far the larger number of cases of cancer of the uterus that present themselves at the New York Cancer Hospital are subjects of disease too far advanced for anything more than palliative treatment. Many of them have not even suspected the existence of any serious disease until it was too late to hope for cure. Yet their history, in many cases, is clear enough as to the existence of symptoms that, had they occurred at an earlier age, would have been promptly recognized. While, therefore, early recognition of cancer is at all times of the utmost importance in regard to treatment, it is especially so at the period when the menstrual life is drawing to a close, when the dangers of malignancy are aggravated, and when the rate of growth of all forms of cancer is enormously increased.

ECLAMPSIA INFANTUM IN ITS RELATION TO FEVER.[1]

By HENRY W. BERG, M.D.,

NEW YORK.

The comparative importance of a disease, from a practical therapeutic stand-point, lies not in its rarity but in its frequency. While a rare affection may attract curiosity and thus gain interest, the common affections of every-day occurrence compel the deepest inquiry. Remembering this, I do not consider it necessary to offer an apology for presenting to your attention a very ordinary condition, but yet one which, from the frequency of its occurrence, necessitates the most thorough understanding of all the factors which enter into its etiology, the pathological conditions under which it occurs, and the most logical and effectual means of treating it. When it is remembered that of all the direct causes of death in infant life, eclampsia, under one form or another, is the most frequent, it will appear that the importance of the condition is not over-estimated.

Eclampsia is not in itself a disease, it is a symptom. Nothnagel[2] and other authorities discuss the possibility of its occurrence as an idiopathic affection. Ozanam[3] limits the term to convulsions which are not dependent upon the presence of any other disease or condition. Convulsions occurring at the outset, or in the course of acute infectious diseases, inflammations, etc., Nothnagel terms epileptiform. Eclampsia[4] infantum should be considered not so much a disease as a symptom. In one case the convulsion may precede or usher in a pneumonia,

[1] A paper read before the New York Neurological Society, January 8, 1889.

[2] Nothnagel: Handbuch, v. Ziemssen, vol. ii., pp. 285–295.

[3] Recherches cliniques sur l'Éclampsie des Enfants, Arch. Gén. de Méd., March, May, and June, 1850.

[4] Berg: Art. Eclampsia, in Wood's Reference Handbook of the Medical Sciences.

in another it may appear at the same time with a brilliant scarlatina; here dentition appears to have been the exciting cause, there the ingestion of indigestible food; in all of these conditions the attacks resemble each other, although in each case the clinical etiology is different. Looking, then, upon eclampsia from an etiological standpoint, it appears that all the possible conditions under which eclamptic attacks may occur in children will come under one of the following subdivisions:

1. Febrile or symptomatic eclampsia.
2. Reflex eclampsia.
3. Toxic eclampsia.

We shall devote our attention mainly to the consideration of the febrile form of eclampsia, although it must not be forgotten that a particular case of eclampsia may be toxic or reflex in its character, and yet fever may be one of the important concomitant symptoms.

At the outset, or in the course of inflammatory conditions, as well as in the acute infectious diseases accompanied by increased pyrexia, eclamptic convulsions occur—rarely in adults and older children, frequently in very young children and infants. In these cases the fever has been almost uniformly supposed to be the cause of the convulsions. A little consideration, however, will show that we have no logical right to assume that the convulsion is the result of the increased temperature, simply because the two symptoms occur so frequently together. Further evidence of the correlation of these two symptoms is certainly necessary, for many diseases which are not accompanied by fever have eclamptic attacks occurring in their course. But even if we grant that the eclamptic convulsions are the direct result of the fever, it does not follow that they are caused by the elevated temperature, but may possibly depend upon toxic changes produced in the blood or nerve-centres as the result of the fever, or as one of the manifestations of the poison of the general disease.

The classification of eclampsia which I have given above I have quoted from an article on this subject which I contributed to Wood's "Reference Handbook of the Medical Sciences." It shows that I do not attempt to assign any one cause, or series of causes, for the affection. On the contrary, it is a symptom of a vast number of affections, and it would be almost as futile to attempt to give all of the conditions which produce pain, as to enumerate all of the conditions in which eclampsia may figure. That many cases are toxæmic is undoubtedly true; that reflex eclamptic attacks occur is without question. It is our purpose here to establish upon a physiological basis the fact that the eclampsia which occurs in the course or at the outset of febrile diseases, in other words, the most frequent form of eclampsia occurring in children, is dependent upon high temperature, and is the direct result of the elevated temperature upon the nerve-centres.

Convulsions, both eclamptic and epileptic in character, although studied with much interest in all times, have been understood, even to a limited extent, only in recent years. About 1850 there simultaneously arose in different portions of the medical world a special interest in the study of convulsions, particularly as regards epilepsy. While, on the one hand, experimental physiological investigations were undertaken by brilliant observers, resulting in the artificial production of convulsions in the lower animals after various lesions, others, equally competent, studied the central nervous systems of epileptics upon the post-mortem table, with the purpose of establishing the lesion or lesions productive of chronic epilepsy. A third series of writers, availing themselves of the progress made in the knowledge of the physiology of the nervous system, advanced theoretical reasons why one portion of the nervous system, rather than another, must be the seat of the pathological cause of the disease.

It will readily appear that the experimental epilepsies, or rather, convulsions, produced on animals by the first series of investigators to whom I have referred, were not really epileptic, but rather epileptiform, or eclamptic. The results of these investigations, and they are by far the most important, can be applied to the study of eclampsia even more legitimately than to the study of epilepsy. We find, then, that Kussmaul and Tenner,[1] in 1856, conducted a brilliant series of experiments upon rabbits, in which they demonstrated that by cutting off the blood-supply from the brain and medulla oblongata of rabbits, by means of temporary ligatures passed around the four large arteries providing the brain (the carotids and vertebrals), eclamptic convulsions severe in character were produced; as soon as the ligatures were loosened the convulsions ceased. It was found, moreover, that after the removal of the hemispheres and cerebellum the convulsions were still produced by tying the blood-vessels, and thence the conclusion that anæmia (followed by venous hyperæmia) of the medulla was the cause of the convulsions. The cutting off of venous return (by tying the large veins) resulted in similar convulsions, and allowing the animals to bleed to death, by severing the arteries or veins, had a similar effect. Brown-Séquard,[2] in a series of articles contributed in 1856 and 1857, produced convulsions by section of different portions of the cord, particularly in the lumbar region. He found also (in guinea-pigs) that section of the sciatic nerves would produce convulsions, and what is more important, the progeny of such animals were often found to be subject to epilepsies. In such animals he was able to mark out certain epileptic zones—markedly, for instance, the distribution of the fifth nerve, the irritation of which was sufficient to produce a convulsion. Many of his so-called spinal epilepsies, however, were afterward shown to be mere reflex manifestations, the result of the irritation, and not convulsive in character. Later, Nothnagel, by irritation and section of the medulla of guinea-pigs caused convulsive seizures; and recently Dr. Otto Binswanger,[3] has repeated the experiments of Kussmaul and Tenner, as well as those of Nothnagel, and has reached conclusions identical with those of Nothnagel, namely, that the medulla is the proper starting-point of convulsive seizures.

Post-mortem finding in chronic epileptics have shed no light upon the etiology of convulsions. But the third class of investigators to whom I have referred above have been successful in applying the knowledge obtained by experimental physiology of the central nervous system, and have done more to elucidate this subject than even the practical investigators already referred to. Among the most valuable monographs in this direction is that of Schroeder van der Kolk,[4] who, writing shortly before the experiments of Kussmaul and Tenner, ascribed epileptic seizures to an exaggerated excitability of the medulla oblongata. Here, he reasoned, was the central point at which all motor tracts converged on their paths into the spinal cord; here were the nuclei for the pneumogastric, hypoglossus, spinal accessory, and glosso-pharyngeal nerves—the nerves providing the muscles of the tongue, face, pharynx, larynx, respiratory apparatus, and the motor nerves of the extremities. An irritation or lesion here would affect all of these muscles, as is the case in a complete epileptiform spasm.

Reynolds[5] states the views of Schroeder van der Kolk with admirable clearness in his article on "Epilepsy." "The derangement which leads to an epileptic (or eclamptic) attack consists in an increased and perverted readiness of action of the medulla and vaso-motor system of nerves, the result of such action being the induction of spasm in the contractile fibres of the vessels supplying the brain, and in those of the muscles of the face, pharynx, larynx, respiratory apparatus, and limbs generally. By

[1] Untersuchungen über Ursprung und Wesen der Falsüchtigen Zuckungen bei der Verblutung sowie der Falsucht. Ueberhaupt. Frankfurt, 1857.

[2] Brown-Séquard: Comptes Rendus, 1856, Nos. 3 and 91. Arch. Gén. de Méd., February, 1857.

[3] Dr. Otto Binswanger: Archiv f. Psychiatrie und Nerv. Krank.

[4] Schroeder van der Kolk: On the Proximate Cause and Treatment of Epilepsy. 1857.

[5] Reynolds's Encyclopædia of Medicine, article Epilepsy.

contraction of the vessels the brain is deprived of blood, and consciousness is arrested. The face is, or may be, deprived of blood, and there is pallor. By contraction of the muscles which have been mentioned there is arrest of respiration, the chest-walls are fixed, and the other phenomena of the first stage of the attack are brought about." "The arrest of breathing leads to the special convulsions of asphyxia, and the amount of these is in direct proportion to the perfection and continuance of the asphyxia." In young children the nervous system is especially in a condition of what may be termed unstable equilibrium, the motor functions being imperfectly developed; this excess of irritability is especially marked in the medulla oblongata. Hence the proneness of young children to eclamptic attacks is easily accounted for. But although van der Kolk's paper was written long before the localization studies, in 1870, of Fritch and Hitzig and their followers, yet he did not even then believe convulsive seizures to be primarily dependent for their origin upon lesion of the medulla alone, but recognized that a primary irritation of any portion of the nervous system, particularly of the cerebral cortex, might excite, secondarily, the convulsive centre in the medulla, and thus produce a more or less perfect epileptiform spasm.

The works of Hughlings Jackson [1] have shed more light upon the method of the production of epilepsies, particularly of the localized epilepsies, than those of any other observer. He taught the importance of studying the attack in each individual case, with especial reference to the aura and onset, with a view to localizing the "discharging lesion." He distinguished between discharging and destructive lesions, the one resulting in irritation phenomena, such as convulsions, the other resulting in paralysis. He taught the importance of localizing those that produce the former, as well as those that produce the latter. There is nothing, however, in his views which militates against the action of the medulla as a convulsive centre. The local discharge of nerve-force simply sets in motion the series of phenomena which result in a convulsive seizure.

This rapid *résumé* of the pathogenesis of convulsive seizures has had for its object chiefly to recall the fact that the chief seat of disturbance in the nervous centres, resulting in an epileptiform or eclamptic spasm, is at the medulla oblongata. If elevated temperature has a direct action in the production of eclampsia, it is upon this portion of the nervous system that its effects must be sought. Fever itself is a nervous phenomenon, the effect of a primary derangement of the nervous system. This much—and it is an important step in advance—the investigations of the last few years have demonstrated. No more interesting study has occupied physiologists of the last decade than those concerned with the pathology of fever. Dr. Macalister,[2] in one of his Gulstonian lectures, gives an admirable *résumé* of the subject. Dr. Welch,[3] in his Cartwright lectures, delivered in this city, has made the subject popular with the medical public. It is far from our purpose, however instructive it might be, to enter upon a discussion of the pathology of fever; but I shall mention certain points, which are now well established, that will throw some light upon the febrile process in its relation to eclampsia.

Two functions are going on simultaneously in the normal living body, which are complementary to each other. They are heat-production, or thermogenesis, and heat-dispersion, or thermolysis. These complementary functions are so proportioned to each other that the healthy body maintains an even blood temperature under various conditions of activity, external temperature, digestion, etc. Now, theoretically, fever might be the result of excessive thermogenesis or diminished thermolysis, or both of these combined; or, finally, it might be the result of increased thermogenesis with increased thermolysis, but the former relatively greater than the latter. Experiment has shown that increased thermogenesis is always present in fever. Not only is the temperature of the body raised, but there is a real increase in the production of heat. It is also found, as a matter of experiment, that there is an increase in the amount of heat given off from the body, or increased thermolysis. It is evident, *a priori*, that the increase in the heat-production must be greater than the increase in the heat-loss, for if it were not, the body temperature would not be increased. Normal temperature, then, is dependent upon the maintenance of a proper proportion between heat-loss and heat-production. The mechanism which controls this proportion resides in the central nervous system. In fever this mechanism is disturbed. Experimenters have sought to localize the portion or portions of the nervous system in which this mechanism resides, and although this work has been prosecuted only in recent years we have already a considerable literature upon the subject. Wood, Liebermeister,[1] Leyden,[2] Ott,[3] Aronson and Sachs,[4] Rosenthal, and others, have done magnificent work. Wood found that in making a partial section through the fissure at the junction of the medulla and the pons, in the dog, the thermogenetic function is stimulated and heat-production is augmented. Irritation of the same region of the medulla by a puncture resulted in a marked temporary fall in the rate of heat-production. He supposed, therefore, that through this region there passed fibres which exerted over the heat function an effect similar to that of the pneumogastric over the heart, namely, an inhibitory action—section or paralysis resulting in heat elevation, while an irritation causes heat-depression. Later observations do not confirm these views. They serve to show, however, that a large tract of nerve-fibres, corresponding proximately to the motor tract, exists in the medulla, which carries the potency of heat-production. Aronson and Sachs, in an admirable series of observations, found that when a fine needle is passed vertically through the brain of a rabbit, in such a manner as to puncture the fibres to the medial side of the corpus striatum, the temperature of the muscles and rectum rises from one and one-half to four and one-half degrees F., and remains for several hours. This experiment can be repeated in different animals with almost constant results; thus the thermogenic tract, which at the medulla corresponded to the motor tract, has separated from it, passing to the inside of the corpus striatum (nucleus caudatus), while the motor fibres are continued onward to the cortex through the internal capsule.

Ott, in observations contributed to the *Journal of Nervous and Mental Diseases*, April, 1884, claims to have discovered four cerebral heat-centres.

1. At the anterior inner extremity of the optic thalamus.
2. At about the body of the corpus striatum.
3. At the caudate nucleus.
4. Near the median line, between the corpus striatum and optic thalamus.

He finds that the first-mentioned of these centres, when punctured, produces the greatest and most marked rise of temperature. Although much work must yet be done before we shall know as much of the localization of heat-centres, so called, as we do of motor areas, or of the origin, course, and distribution of thermic nerve-tracts, yet this much has certainly been established, that the heat function of the body is under the control of the large nervous centres, chiefly located in the brain, and probably distinct from the motor centres. For the thermic nerve-

[1] Hughlings Jackson: Epilepsy, West Riding Lunatic Asylum Report.
[2] Dr. Macalister: Gulstonian Lectures, Fever, Lancet, 1887, vol. i., p. 507.
[3] Dr. Welch: General Pathology of Fever, THE MEDICAL RECORD, 1887.

[1] Liebermeister: Handbuch der Path. u. Therap. der Fieber, Leipzig, 1875.
[2] Leyden: Deutsches Arch. f. Klin. Med., Bd. v.
[3] Ott: Journal of Nervous and Mental Diseases, April, 1884.
[4] Aronson and Sachs. Pflüger's Archiv, Bd. xxxvii.

tracts, although separate in the brain from the motor nerve-tracts, are closely connected with the latter at the medulla oblongata.

It would appear, then, that an attack of eclampsia occurring in the course or at the outset of a disease or condition of which the temperature is, apparently, the causative element, as far as the convulsion is concerned, calls into activity two sets of nerve-centres—the thermogenic centre or centres, and the convulsive centre or centres.

Hughlings Jackson has shown that what he calls a "discharging lesion" of any portion of the brain may cause the action of the medulla as a convulsive centre. We do not know the nature of such a "discharging lesion;" it leaves no trace which can be demonstrated at the post-mortem table. It may be excessive hyperæmia, or anæmia, or some minute change in structure. We have no means at present of demonstrating the lesion. A similar alteration or lesion occurs in the thermogenic centre. Its effect is fever or rise of temperature; secondarily it throws into activity the unstable convulsive centre, if I may so term it, in the medulla, especially in infants, in whom, as has been seen, the medulla, together with the motor centres, are in an exalted state of irritation. Furthermore, it is probable that in the medulla the motor and thermic nerves are intermingled. What more natural than that an irritation of the one results in an irritation of the other? Of the probability of this hypothesis we have, however, another proof. The same reasons that would lead us to expect that the irritation of the fever-centres should, in proper subjects, cause an irritation of the convulsive centre would also presuppose the possibility of a reversal of this process. In other words, we should expect the activity of the convulsive centre to produce a secondary activity of the fever-centre.

This is certainly fully demonstrated by practical experience at the bedside.

All authorities are agreed as to the enormous rise of temperature which occurs in the course of a so-called "status epilepticus." The epileptic falls into convulsions, repeated at very short intervals, so that the patient does not recover consciousness for hours, or even days. Shortly after this condition has set in the temperature begins to rise, and sometimes reaches an enormous height. Bourneville has seen it as high as 107½° F.; Reynolds reports equally high temperatures.

I am convinced that such a temperature can only be accounted for upon the hypothesis that the irritation of the eclamptic centre has been reflected to the thermogenic centre. For in "status" the convulsive movements are sometimes so slight as to be scarcely perceptible, the patient is unconscious, and perhaps foams at the mouth, the eyelids are open, the eyeballs rolled up and toward one side; but certainly the rise of temperature cannot be accounted for by excessive muscular activity. This quiet form of "status" can be seen in children suffering from reflex eclampsia without fever at the outset. If seen, however, when the little patient has been unconscious and slightly convulsive for hours, the temperature will be seen gradually to rise. In these cases the increased activity of the heart's action is not in proportion to the rise of temperature. The urine, if examined, will be found normal, and the only way in which I can explain this secondary rise of temperature is on the hypothesis I have just stated; and here we have an important indication for treatment. In these cases of eclamptic or epileptic "status" with secondary rise of temperature reduce the fever, both to guard the patient from the effects of high temperature, but above all from the reflexion of the irritation of the thermogenic centre to the convulsive centres, the irritation of the one causing the irritation of the other, and *vice versa*.

The chief object of these remarks is a therapeutic one. I find in general practice that a great deal of importance is attached, both by physicians and even teachers and text-books, to the administration of antispasmodics in eclampsia, particularly in eclampsia infantum, while very little attention is given to the cause of the convulsion. While in toxic eclampsia, as in the nephritis of scarlet fever, the toxic element is treated, the fever is overlooked. Where an inflammatory disease is diagnosticated with eclampsia, the fever is treated, not in the energetic way which is necessary, if we recognized it as a direct cause of the eclampsia, but as a symptom of the inflammation which it is desirable to get rid of. In reflex eclampsia, such as that due to dentition, he who believes in such an eclampsia will scarify the gums, and the fever, if present, will be overlooked. I do not wish to be understood as claiming that every case of eclampsia is accompanied by fever, even if toxic or reflex. On the contrary, I have tried to be careful to give no such impression. In many cases the eclamptic centre is primarily excited, and if the eclampsia does not last too long fever does not occur; but it is certainly true that eighty per cent. of the cases of eclampsia met in practice are accompanied by fever. The thermometer should first be questioned before any form of treatment is entered upon. If there is a temperature above 102° reduce that, and omit the antispasmodics if you will, and, as a rule, the patient will do well. In other words, I believe that an attack of eclampsia infantum should be treated as a symptom, the cause of which, as a rule, is fever, unless it is proved to be otherwise. Upon this basis I have treated my cases, within the last two years especially, and have had gratifying results. As a rule, the eclampsia ceases when the temperature has been reduced to the normal. In inveterate cases of "status," where the temperature has risen as a result of the continued spasm, attention to the temperature often succeeds in cutting short an attack which appeared hopeless. In the article on "Eclampsia Infantum" in Wood's "Handbook," I have advised the use of antipyrine and antifebrine, together with cold or tepid sponging, as may be necessary, with equal parts of water and alcohol. The former are given to clinch the more rapid effect of the latter. The thermometer should be the guide. Whatever else is done in febrile eclampsia may or may not be useful. The reduction of fever is peremptory.

In treating my cases upon the above basis I have been so successful within the past few years that I may be pardoned if I give my method of treatment in detail. Upon being called to such a case I first take the temperature; finding this elevated I examine the patient thoroughly for a cause of the elevation. Having arrived at a diagnosis, I proceed to reduce the fever in the following manner: If the temperature be above 103°, I prepare a mixture of one part of alcohol to three parts of cold water, from which the nurse wrings perfectly dry a sheet large enough to be wound around the little patient in a double layer. Over this enveloping sheet is wrapped a perfectly dry blanket. In the meantime a proper dose of antipyrine or antifebrine is administered by the mouth, if the patient is able to swallow; by the rectum in double doses if unable to swallow. Such a dose is repeated within a half hour, and if the temperature is very high a third dose is given. I am accustomed to give children a year old six grains of antipyrine, repeated three times; to children over two years of age, eight grains, repeated three times. Antifebrine is effective in about half the quantity. The cold sheets are changed at first at frequent intervals, sometimes every five minutes, later on at longer and longer intervals, until the temperature having fallen to the normal they can be dispensed with entirely. On general principles I allow an enema to be administered, and have an ice-bag applied to the head. The bromides I rarely consider necessary in a case of true febrile eclampsia. In cases of "status" with no rise of temperature, we have no other means of treating the patient except symptomatically to reduce the irritability of the nervous centres. In such cases, antispasmodics and anodynes, bromides, chloral, opiates, and anæsthetics have their use and function. In reflex eclampsia, and even in the toxic forms of the disease

where we can treat the etiological factor, these remedies are useful; but even here the presence of fever necessitates the antipyretics first and the antispasmodics afterward.

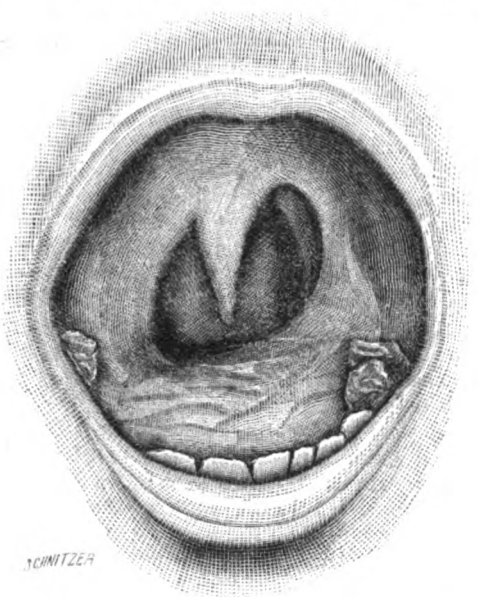
245 Seventh Street.

A CASE OF PRIMARY TUBERCULOSIS OF THE TONGUE—PRESENTATION OF THE PATIENT THREE YEARS AFTER TOTAL EXTIRPATION BY KOCHER'S METHOD.[1]

By WILLIAM T. BULL, M.D.,

NEW YORK.

The history of this patient has already been published by Dr. D. Bryson Delavan, in a paper on seven cases of buccal tuberculosis (*New York Medical Journal*, May 14, 1887); but as two years have gone by since his paper was read, and the man continues to enjoy good health, it has seemed to me of interest to call attention to him once more. It was three years ago, on December 7, 1885, that Kocher's operation was performed at the New York Hospital, for what was supposed to be cancer of the tongue. The man was thirty years of age, and had suffered for six months with an ulcer quite at the base of the tongue, which gave rise to profuse salivation, great pain in swallowing, and had been accompanied with serious depreciation of his general health. The lungs and larynx were sound. A hard gland, the size of a horse-chestnut, existed beneath the ramus of the jaw. The ulcer had an indurated edge and sloughing base. Its situation was so far back that it could only be seen with a mirror; and this fact deterred me at the time from removing a portion of its edge for microscopic examination. At the operation the gland above referred to, together with the submaxillary and lingual glands, were removed, and the muscles of the tongue cut through on a level with the hyoid bone. The wound healed, without complications, in six weeks, and his general health improved rapidly. He gained thirty-five pounds in weight before leaving the hospital. Since then he has continued in robust health. The microscopic examination by Dr. George L. Peabody, pathologist to the New York Hospital at the time of operation, left no doubt as to the tuberculous nature of the disease.



At the present moment this case presents several interesting and instructive features.

1. By a *radical* operation the man has been saved from a disease quite as destructive in its career as cancer.

2. Notwithstanding the loss of the entire organ he is able to speak sufficiently clearly to enable him to pursue his daily avocations without attracting attention. He was taken by an ambulance to the New York Hospital, two weeks ago, for a fractured leg, and it was only within a day or two that his defects in speech were noticed.

3. He is *positive* that the sense of taste is as acute as it ever was.

4. The satisfactory performance of the functions of speech and taste, after so serious mutilation, should encourage us to have confidence in the results of this operation when practised for carcinoma. It is in theory the best of all radical operations for that disease, if we except amputation of a limb; for by it we are able to remove not only the parts affected, but all the tissues and glands next in order of invasion.

The following is a more detailed description of the present condition. On a front view no deformity is perceptible. On looking at the right side, the cicatrix is drawn out of sight under the jaw, and is not unsightly, though there is a decided depression of the submaxillary fossa. The movements of the jaw are perfect. The floor of the mouth is covered with mucous membrane, the muscular layer beneath presenting some small irregularities (see illustration). The isthmus of the fauces is slightly narrowed, because by the cicatricial contraction the right anterior pillar of the fauces has been drawn down and to the left. (In the first six months after operation I twice divided this band with scissors.) His sense of taste I have not tested in any way. In speaking he has no difficulty with vowel sounds, and the chief defects are with the consonants. He pronounces *g* like *v*, *k* like *p*, *t* like *p* or *d*, *q* like *pooh*, *m* like *n*, *k* like *p*, *ch* (hard) like *h* (as in "horus" for chorus), *ch* (soft) like *f*, *x* like *s*, and *th* like *f*. These are the most marked peculiarities; but the words are easily understood by the context, and he finds no serious difficulty in making himself understood. A word may be said as to the error in diagnosis. A number of such errors have been recorded. Batlin ("Diseases of the Tongue," p 291) says: "All the primary tuberculous ulcers of the tongue described and examined by Nedopil had been cut out under the impression that they were cancerous. To this I may add that the manner of dealing with them thus summarily was the best that could be devised both for tubercle and cancer, and if the same decisive method were adopted in the case of all doubtful ulcers of the tongue, there would be a striking diminution in the number of deaths from lingual carcinoma." The microscopic examination of a section of a portion of the edge of the ulcer, together with search for bacilli in scrapings from the surface, will generally enable one to make a diagnosis, and I have been of late in the habit of making such an examination in every case before beginning treatment.

35 West Thirty-fifth Street.

[1] A paper read before the Surgical Section of the New York Academy of Medicine, December 10, 1888.

The Privilege of being a Doctor.—Mr. Crespi says, in the *Provincial Medical Journal*, November, 1888, that "the greatest privilege which the doctor enjoys is the facilities he has of getting to know the inner life of all classes. Man is always worth studying, and no human being is without certain traits which proclaim his Divine origin. The rudest artisan, as well as the humblest peasant, presents features which repay careful scrutiny, while the most illustrious rulers of mankind often exhibit littleness and bad traits that excite pity. The doctor knows his clients at their best and their worst, that is, he sees them when they show themselves as they really are, and off their guard; he therefore, perhaps, more than anyone else, can estimate the greatness and the devotion which often hide in the lowly cottage, while he sees the vices and evil passions of the great. Doctors ought to be profound masters of human nature, and should enrich the world with powerful delineations of character and with philosophical treatises which should rank among the brightest gems in literature."

THE IMMEDIATE APPLICATION OF FORCEPS TO THE AFTER-COMING HEAD IN CASES OF VERSION WITH PARTIAL DILATATION OF THE CERVIX.[1]

By H. C. COE, M.D., M.R.C.S.,
NEW YORK.

It is not my purpose to enter into a discussion of either the advisability of extracting the child immediately after version, or the best method of manual extraction to be practised in ordinary cases. I limit myself entirely to cases in which the os is just sufficiently dilated to admit the introduction of the hand and the performance of version, the soft parts being more or less rigid, and in which the life of the child is imperilled by even a slight delay in the extraction of the head. There is considerable difference of opinion among writers on obstetrics regarding the application of the forceps to the after-coming head under these circumstances, so that it is with much satisfaction that I find my opinion on the subject supported by such an authority as Lusk, who affirms that "where the arrest of the head is due to stricture of the os externum or internum, the forceps will sometimes bring the head rapidly through the cervix when traction upon the feet only serves to drag the uterus to the vulva" ("Science and Art of Midwifery," p. 366). Barnes ("Obstetric Operations," p. 67) teaches essentially the same. Busch and later English writers attribute their low infant mortality after version to the prompt use of the forceps. Whether this is true or not, I regard it as a matter of regret that the application of the forceps to the after-coming head has become a comparatively rare obstetric operation. I never saw it practised in the Vienna clinics, probably because the conditions happened to be such as to render it unnecessary. The following unsuccessful cases will serve to illustrate the point which I wish to make:

Case I.—(Seen with Dr. J. B. Hunter.) Primipara, aged thirty-five. Moderate contraction of pelvis anteroposteriorly, with rigidity of soft parts; albuminuria and œdema of face and ankles; severe headache, eclampsia imminent; so that labor was induced within two weeks of term. Cervix dilated with Barnes's bags, version, and immediate extraction, as the fœtal heart was rapid and irregular, and a living child was most earnestly desired. The head (which was large) was encircled by the non-dilated cervix and could not be extracted; the cord had stopped pulsating, when the forceps were applied. The head was delivered in a few seconds, the perineum being torn through the sphincter. I worked over the child for an hour, but could not resuscitate it. The mother made a good recovery, the perineal wound healing with a primary continuous suture.

Case II.—(Seen with Dr. J. L. Morrill.) Multipara, aged thirty-five. She had borne two or three dead children, all of whom were delivered by high forceps, there being a moderate contraction of the conjugate. The pains were ineffectual, and after several hours the head remained movable above the brim, the cervix being partially dilated. Version was performed, but the head was grasped by the cervix; after prolonged efforts had been made at manual extraction the forceps were applied and the head was easily delivered, but the child was dead.

Case III. (Infant Asylum.)—Primipara, aged sixteen years and eight months. Suppression of menses at fifteen, and they did not appear again before pregnancy.

March 21st.—Urine examined on account of œdema of lower extremities, and found to contain fifty per cent. of albumin. Under treatment the œdema disappeared, and the amount of albumin diminished two-thirds.

March 27th, 3 A.M. The patient was suddenly attacked with convulsions, which recurred at frequent intervals and were unusually severe. The resident physician, Dr. Davis (who conducted the case throughout with excellent judgment), at once administered an anæsthetic and introduced water-bags, so that I was able to turn at 6 A.M. The after-coming head was tightly grasped by the cervix, and time was thus lost in attempts at manual extraction. It was easily delivered with forceps, but the child could not be revived. The perineum was torn partially through the sphincter, in fact, it was lacerated at the outset by the introduction of my hand. It was sutured with silver, and the patient had good retentive power at the end of six months. She had two convulsions after delivery, became comatose, had complete suppression of urine, and developed general œdema of the lungs. Under the use of pilocarpine, dry cupping, and diuretics she recovered; the albumin disappeared in a day or two, and on the twelfth day after delivery she sat up.

Case IV. (Infant Asylum.)—Sextipara, aged thirty-eight. Pelvis normal. Confinement expected the latter part of April.

June 1st.—There was a sudden great increase in the amount of liquor amnii; cause unknown. Her health deteriorated rapidly; the heart-action was at times alarming, and on June 13th labor was induced.

June 14th.—The cervix was partially dilated with water-bags, after she had had slight pains for upward of twelve hours. Membranes ruptured; head large and would not engage. Uterus atonic by reason of over-stretching from hydramnios; the water escaped slowly.

June 15th.—Constant pain in abdomen, but uterine contractions feeble, and patient exhausted, with tumultuous heart action. Head freely movable above the brim; fœtal heart rapid and irregular. Version was easily performed at 7 P.M. The head was arrested at the brim, being firmly grasped by the cervix. Several minutes were wasted in futile attempts to extract it. The forceps were then applied, after the pulsation in the cord had stopped, and the head was delivered with some difficulty. The perineum was only slightly torn, but the patient had enormous hemorrhoids, which ruptured and gave rise to sharp hemorrhage, requiring the application of artery-forceps. Weight of child, eight pounds and three ounces. Head large and incompressible, the posterior fontanelle being closed. The child was resuscitated after a long struggle, but died in convulsions seven hours later. Autopsy showed extreme cerebral congestion. The mother recovered slowly, after presenting alarming heart-symptoms, and a general subnormal temperature, except on the fifth day when it rose to 102° F. without appreciable cause, but fell at once. She had in all probability a fatty and dilated heart. [I am indebted to Dr. Davis for notes of the last two cases, which occurred in my service at the Infant Asylum.]

In citing these examples of unsuccessful extraction I need only add, in order that the difficulties may be assumed as real, and not apparent, that the operator possessed a fair amount of experience in this class of cases, and that he was in each instance assisted by skilled physicians and nurses, so that all the elements of success were present. The obstacle to delivery was the same in every case, *i.e.*, the head was grasped by the rigid, partially dilated cervix in such a manner that traction upon the trunk simply dragged the uterus down to the vulva without liberating the head at all; moreover, it was impossible to introduce a finger into the child's mouth. Pressure upon the fundus uteri simply forced the organ downward, but did not advance the imprisoned head. Of course the large size and premature closure of the fœtal head in one of the cases reported, and the narrowing of the anterior conjugate in another would partly account for the arrest at the brim, but these factors do not concern me now. I wish to invite discussion on the single topic which I proposed. I believe that in each of the four cases cited the child would have been saved if the forceps had been applied just as soon as I had discovered why the head did not escape. The application of the forceps to the after-coming head is quite easy if the child's trunk is strongly extended, and the entire operation

[1] A paper read before the New York Academy of Medicine (Section in Obstetrics and Gynecology) December 27, 1888.

usually occupies only two or three minutes. Of course there is considerable risk of lacerating the cervix and perineum by delivering so rapidly; but what is that when a living child is obtained which would otherwise have been sacrificed when on the threshold of safety? Those of us who are attached to lying-in hospitals, and are constantly striving to keep our maternal mortality at the lowest possible figure, are apt to attach comparatively slight importance to the survival of the child. In private practice, however, we must view the matter in an entirely different light. It often happens that we are consulted by an old primipara, who has been led to believe that she cannot have a living child, or by a multipara who has borne several dead ones. Such women are extremely anxious that the infant should be saved at all hazards, and will make light of severe lesions if we are successful in obtaining their wish. I feel that some apology is necessary for introducing such an old theme, but since writing the above my attention has been directed to a short, but suggestive, paper by Dr. P. M. Schiedt, of Philadelphia, on "The Treatment of the After-coming Head" (*American Journal of Obstetrics*, March, 1888). The writer holds even stronger views than those which I have outlined, and his arguments and statistics are quite convincing. Among other indications for the use of forceps in this connection he mentions that which I have discussed. I quote from his concluding sentences: "The most vigorous supporters of the manual method declare that it requires from five to six minutes to extract the child's head, while Freudenberg and others say that the forceps should be applied and the head extracted in from two to three minutes. It is manifest that the difference in time, at a moment so critical, will result in the saving of many children. Time is the great factor, and by the forceps time is saved."

A NEW METHOD OF TREATING GONORRHŒA.[1]

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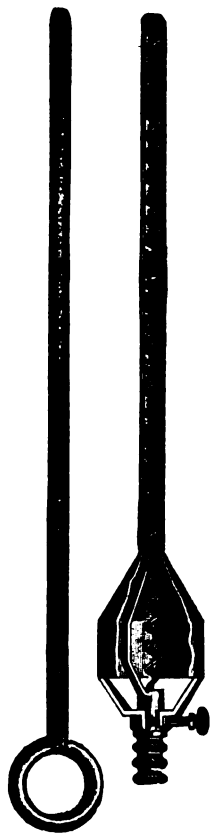
DURING the last few years considerable progress has been made on the subject of gonorrhœa. The discovery of the specific cause—the gonococcus of Neisser—has thrown a great deal of light upon the nature of the disease. It has made it possible to separate the same from other similar, yet vastly different processes, and we are enabled to test the multitude of remedies used heretofore by their direct action against those microbes, etc. On the other hand, the development of endoscopical methods has opened a wide field for research, more especially in regard to the chronic forms of gonorrhœa, and our ways and means to treat these conditions have been materially improved. But, unfortunately, the treatment of the acute stage has so far remained just as unsatisfactory as ever, and still amounts to a *laisser-aller;* for no honest observer will deny that the composition of the various injecting fluids makes very little difference, and that hygienic and dietetic measures are of much greater value to our patients. As I intend here to speak of an entirely novel plan of treatment, I shall refrain from discussing any of the older methods; nor can I give any bibliographical introduction to my subject.

The new plan, with which I became familiar through the kindness of Dr. C. S. Pixley, of Elkhart, Ind., consists in introducing dry powders into the male urethra. The idea of this treatment is not entirely original; chronic otitis media and obstinate cases of leucorrhœa have long been managed by the application of powdered boric acid. But great difficulty was experienced in finding a proper instrument through which to convey the powder into the male urethra. After many attempts and laborious trials it has at last been perfected to the shape in which I present it herewith.

The instrument consists of three principal parts, two of which resemble very much the original form of the urethroscope, as devised by Désormeaux, Fenger, and others; namely, first, a cannula, with a cup attached to one end, second, an obturator, to facilitate the introduction; and third, a hollow spiral, whose object is to convey the powder through the cannula into the urethra. The cannula has, in the present form of the instrument, a length of six inches, and a diameter of about one-fourth inch (corresponding to No. 20 of the French gauge). The cup has a capacity for about two drachms of dry powder; a narrow bridge with a set-screw is attached transversely to the cup, in order to fasten the spiral in its proper position. The length of the spiral corresponds exactly to that of the cannula, so as not to protrude beyond the lower end of the same when fully inserted; the upper end of the spiral is formed by a milled head, on the top of which is an arrow, indicating the direction in which the spiral should be turned. Just below the milled head is a groove, into which fits the set-screw. Below this groove, to what may be called the neck of the spiral, is attached an agitator, which during the turning continually moves the powder toward the spiral. The obturator, which needs no further description, transforms the cannula practically into a solid, straight, urethral sound.[1]



Cut, showing a vertical section of the instrument, with the spiral in its place. Half size.

The instrument could, of course, be easily manufactured in different sizes, although the present (No. 20) will answer for most cases. The length of six inches will allow the introduction up to the membranous urethra only, which, in acute cases, where the inflammation has not invaded the deeper parts, will be all-sufficient. With a slight modification, increasing the length of the cannula and spiral, and placing the cup under an angle, the instrument could also be adapted for the purpose of treating the deepest parts of the urethra.

Mode of operation: The patient is directed to evacuate his bladder perfectly; next the urethra is thoroughly washed out with a weak solution of permanganate of potassium (1 : 10,000), or some other suitable alkaline solution; this may be best done by the well-known retrojector. Now the urethra is dried as perfectly as possible by gently stripping the penis with a clean towel. The patient is then placed in a recumbent position, and the instrument, with the obturator inserted, is lubricated (best with glycerine) and gently introduced into the urethra back to the pars membranacea. The obturator is now gently withdrawn, so as to cause the least possible irritation of the mucous membrane, the spiral substituted therefor, and fastened by the set-screw into its place. The medicament is now placed into the cup, and by constant turning of the spiral in the direction indicated by the arrow, conveyed through the cannula to the deep urethra. At first very little resistance to the turning of the spiral is felt; as soon as the powder begins to be deposited in the urinary channel, the operator will experience a decided resistance. The instrument may now be slowly withdrawn, and in this way the whole urethra filled with the powder. The operator can easily

[1] A paper read before the Chicago Medical Society, December 17, 1888.

[1] The instrument is furnished by Haussmann, McComb & Dunn, in Chicago.

regulate the amount of powder he wishes to introduce. It is not possible to pack the urethra too firmly, as the instrument is in a certain measure self-regulating. The operation completed, a small quantity of the powder is placed around the meatus and the glans penis, to keep these parts as dry as possible from the ensuing discharges, and the patient directed to keep the same always covered with dry absorbent cotton.

If properly executed, the whole operation will cause very little inconvenience to the patient; by the previous use of a cocaine solution it can be made absolutely painless. The patient will, during the next few hours, naturally have a sensation of fulness; by and by, as the powder is dissolved and eliminated by a profuse watery discharge, the urethra will be emptied within four to six hours.

The number and frequency of operations will depend on the gravity of the symptoms; one application daily will usually be sufficient during the first few days (Dr. Pixley has often done it twice daily when practicable); later it may be done only every second day, or even at longer intervals.

In the composition of the powder, boric acid has been adopted as the basis, to which may be added different drugs, to meet the requirements of the case. A long series of experiments will probably be necessary to finally determine what combinations may be of most value. For the present, the following suggestions may be useful: In the beginning the mildest possible powders should be used, such as pure boric acid, or, as Dr. W. E. Morgan recommends, calomel, one part; bismuth subcarbon., two parts; boric acid, twelve parts. With the decrease of inflammatory symptoms the powder can be made more astringent by an addition, in proper proportions, of alum, subnitrate of bismuth, hydrastine, etc. Reports of the poisonous effects of boric acid after packing the vagina have lately been published;[1] but with the comparatively small quantity of the acid used in the urethra no such result seems here possible, except in rare cases of idiosyncrasy.

The treatment as described has been practised by Dr. Pixley for the past two years, and by Dr. Morgan, of this city, myself, and a few others for several months. The number of observations is as yet not sufficiently large to give any valuable statistical data; but our experience so far has been favorable enough to justify the placing before the profession at large of the new method, and to strongly recommend it for a fair trial.

Looking upon this plan of treatment merely from a theoretical stand-point, we shall find in it some points which must commend it to our favorable consideration. Above all, it is based upon antiseptic principles. The inflamed and suppurating mucous membrane remains in contact with a mild yet powerful antiseptic or astringent agent for several hours in succession; this will surely appear more effective than the occasional use of an injection during a few minutes. The diseased urethra is in this way placed under nearly the same conditions as any suppurating cutaneous surface. The purulent discharge will immediately be made innocuous, and its infecting influence upon uninvaded parts will be checked.

From the actual observations made, the following experience has been gathered. It is desirable to begin the treatment as early as possible. The acute inflammation forms no contra-indication against the use of the instrument. The effect of the first few powder applications is to deprive the secretion of its purulent character and to change it to a mucous fluid; a few more treatments will result in rendering the discharge only serous in character, when a mild astringent injection will terminate the course of the disease in a few days. The duration of the disease has in this way in all cases been materially shortened. Chordee, usually so troublesome, has in every case been greatly relieved. Epididymitis, cystitis, stricture, or any other complication, was not known to follow any of the cases treated in the foregoing manner. While the benefit derived from the treatment was not always equally great, there was never the least harm done by it.

I must frankly admit that I was at first, before having tried it, very far from being enthusiastic about the method, as I had some theoretical objections to it; my practical experience, however, has led me to look upon it with a great deal of confidence, and the hope that we may really have made a step toward improving the rather deplorable condition of the treatment of gonorrhœa. Still, I wish the foregoing to be regarded merely as a preliminary communication, being prompted by the desire to invite others to try the new plan. With the co-operation of a larger number of observers it will soon be possible to arrive at definite conclusions regarding the value of this novel method.

[1] Welch: Toxicological Effects of Boracic Acid, THE MEDICAL RECORD, November 3, 1888.

CREOLIN IN THE LOCAL PREVENTIVE AND CURATIVE TREATMENT OF INFECTIOUS THROAT DISEASES.

BY F. W. KOEHLER, M.D.,

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IN Nos. 17, 18, and 19 of the current volume of the *Wiener Medizin. Wochenschrift*, Dr. James Eisenberg describes a series of experiments made with the new antiseptic creolin. He shows it to be an extremely powerful germicide, and yet, even in large doses, altogether harmless to man. These qualities made it appear to me an ideal remedy for the preventive and curative treatment of infectious throat troubles. Adults can use gargles of the ordinary poisonous antiseptics, like the bichloride of mercury, but for children something is needed which can be safely swallowed. Soon after I had read Dr. Eisenberg's article I procured a supply of the creolin, and have since used it to the exclusion of other local applications. My success with it has been very pleasing indeed. In treating infectious throat troubles I now always put not only the patient, but also all the well members of the household on the creolin treatment. Thus I have prevented, I think, diphtheroid sore-throat from going through entire families of children, which it had previously, under other modes of treatment, always done. But it is as a preventive of true diphtheria that I expect most from the creolin. Dr. Eisenberg's experiments show that no form of pathogenic germ can resist its action; and it is therefore reasonable to suppose that the germ of this disease will also succumb to it. Recently I was called to see an old lady, who, a day or two after exposure to a case of diphtheria (proved to be so by paralysis occurring several weeks afterward), was taken sick with rigors, fever, and sore-throat. Almost simultaneously her daughter and son-in-law were taken in the same way; but her little grandchild, a boy of four years, showed no signs of the disease when I was called. I at once, however, put him, as well as the others, on the creolin treatment. The child, although always rather predisposed to throat and bronchial trouble, escaped an attack altogether, and his parents and grandmother recovered promptly.

Diphtheria is certainly one of the most dreadful diseases that confront us, and any treatment that might reasonably be expected to prevent its spread should be given a trial. I am inclined to believe that if the mouths, throats, and nasal passages of children were kept as clean as their faces, there would be much less of the disease. When diphtheria prevails, no child's toilet should be considered complete until the upper air-passages have been thoroughly douched with some suitable antiseptic; and in the long list of such agents I know of none that fulfils the requirements so well as creolin.

It is a well-known fact that the secretions of the nose, mouth, and throat swarm with many kinds of micrococci. Under ordinary circumstances they are harmless, but there is reason to believe that under favorable conditions

they may become pathogenic. What these conditions may be, we do not as yet know. Possibly, however, a slight change in the character of the secretions, brought about by a simple inflammation from exposure to cold and wet, may be sufficient to make a harmless bacillus virulent. A change in the culture-medium is known to change the character of micrococci. Bacteriologists agree that the virulent bacillus anthracis can, by cultivation outside the human body, be made harmless. Contrarywise, Pasteur has shown that the virus of swine-plague can be made more virulent by transmitting it through a series of pigeons. These facts have an important bearing on the vexed question of identity or non-identity of diphtheria and diphtheroid sore-throat. Cases constantly occur seeming to prove that from exposure to a plain and simple case of follicular tonsillitis there may arise one of virulent diphtheria, and *vice versa*. When such facts as quoted above are established, what is there remarkable in the benign germ of diphtheroid sore-throat becoming, by successive suitable cultivations, the virulent cause of diphtheria? Admitting the probability of the thing, does not the necessity of rendering the parts usually affected by the disease as nearly aseptic as possible become doubly important? But even without admitting it, does it not seem that we should, when diphtheria prevails, use all possible diligence to destroy the poison of the disease before it has had time to take root? I hold it a matter of conscience to induce those in charge of children to keep them medically as well as æsthetically clean. In creolin we have an agent cheap, effective, and harmless. Possibly the peroxide of hydrogen may also be suited to the purpose; but Dr. Gifford tells us in THE MEDICAL RECORD for September 1, 1888, that even the weakest solutions recommended "cause smarting of the mucous membranes," and that the fifteen volume solution is "sharply irritating." The one and two per cent. solutions of creolin that I employ have not this objection, and that they are potent germicides Dr. Eisenberg's experiments prove.

THE MODE OF ACTION AND VALUE OF ANTIPYRINE IN TYPHOID FEVER.[1]

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THE topic that I wish to consider in connection with this discussion of typhoid fever opens the whole subject of the value of chemical antipyretics in this disease. In the brief time allotted to me, however, I can only outline the arguments upon one side of the question.

Antipyrine has been used in typhoid fever only as an antipyretic, and in valuing the drug we naturally are led to inquire, first, How does it depress temperature? The production of heat is accomplished by an increase of cellular metabolism, which undoubtedly is greatest in the muscles and the large glandular organs. It is under the control of, and excited by, a thermic centre or centres in the nervous system. In typhoid fever there occurs a general systemic poisoning. It seems probable that increased bodily temperature is only one manifestation of this poisoning, and is due to a toxic influence exerted upon the central nervous system. Bodily temperature in this fever may, therefore, be depressed either, 1, by destroying the poison; or, 2, by counteracting its effect upon the heat-controlling portion of the nervous system; or, 3, by aiding in the elimination of heat from the body.

Antipyrine, it has been supposed, in part lowers temperature by increasing elimination, as it causes dilatation of the peripheral vessels,[2] and in fever usually provokes copious perspiration. But Rosenthal has shown that radiation of heat is not increased by it.[1] The experiments of H. C. Wood, both upon feverish and non-feverish animals, have shown, too, that heat-dissipation is lessened by it, but proportionately not so much as heat-production is.[2]

The results of experimentation upon animals, and of clinical observation upon man, are almost unanimous in showing that tissue-change is lessened, and that thus heat-production is very greatly diminished. It is undoubtedly to this action, almost exclusively, that antipyrine owes its antipyretic power. It lessens the amount of urea excreted, and Lepine and Porteret have shown that it diminishes the transformation of hepatic glycogen into sugar.[3] These changes are probably accomplished by a direct action of the drug upon the gland-cells of the kidneys and liver. Undoubtedly, tissue-change is diminished in the muscular structures, as well as in the important glandular ones.[4] It is not established, however, that this apparently universal inhibition of metabolism is due to the action of the drug upon all the tissues; on the contrary, it has been shown that it is due to an action upon a portion of the nervous system in or above the medulla, by which metabolism in the tissues is controlled.[5]

Antipyrine does not destroy or eliminate the pyrogenic poison, but counterbalances the action of the latter upon the nervous system, very much as atropia does the action of pilocarpine upon the sweat-glands. We are led to this conclusion because the drug often lowers even normal temperature, and will depress a fever temperature, no matter what may be its cause—whether it is the result of an artificial over-heating of the entire body, or of the action of a septic poison, or of inflammation. We are led to the same conclusion by the fact, which clinical experience has demonstrated, that although by chemical antipyretics, such as antipyrine, we may keep the temperature almost continually depressed, the body does not stop wasting, and the typhoid fever is not aborted, nor, as a rule, is its course materially modified.

Does the simple depression of temperature accomplish good? This question involves another: Does pyrexia in itself endanger life? Neither of these questions can be answered with certainty. The recent discussion[6] by Liebermeister and Unverricht in regard to them have been most instructive. In my own experience I have found that those cases that have been treated by antipyrine ran no shorter course and recovered no more quickly on the average than those treated without chemical antipyretics. And I find the largest portion of the most recent evidence fully confirms these observations.

The probable explanation of this lies in the fact that the poisons which provoke the fever diminish tissue-repair much more than they increase tissue-disintegration. Indeed, the total amount of tissue-disintegration during the fever is less than during health, but compared to tissue-repair, under the same circumstances, it is greater. Moreover, while in typhoid fever tissue-disintegration is relatively great, it is incomplete, so that the chemical bodies which in health we look upon as the final result of tissue-disintegration, such as urea, are diminished in amount; but extractives and products of incomplete disintegration are increased in proportion to the severity of the fever. Among these incomplete products are probably leucomaïnes, and possibly pathological leucomaïnes. Although antipyrine diminishes the complete disintegrative changes of the tissues, and thus lowers temperature, it does not aid in the upbuilding of the tissues or in a restoration of

[1] A paper read before the Chicago Medical Society, December, 1888.

[2] Numerous observers have noticed this effect. A complete review of this action of antipyrine is given by E. Marylino, in the Zeitschrift für Klinische Medicin, Bd. 14, Heft 4; also see Beyer, The American Journal of the Medical Sciences, 1886.

[1] Centralblatt für Physiologie, No. 5, 1888.

[2] H. C. Wood: Therapeutics; Its Principles and Practice, p. 628. 1888.

[3] Le Semaine Médicale, April, 1888.

[4] Lepine and Porteret have shown that relatively to health in antipyrinized animals muscular glycogen is increased twenty to twenty-eight per cent. Le Semaine Médicale, August, 1888.

[5] The dependence of antipyrine upon the nervous system, in order to produce antipyresis, has been shown in various ways. In the last few months Sawadowski has shown that antipyrine cannot depress, nor putrid matter elevate, the temperature, if the cord is cut above the atlas Centralblatt für Physiologie, No. 5, 1888.

[6] Deutsche Medicinische Wochenschrift, 1888.

equilibrium between repair and disintegration, therefore loss of flesh and strength persist in spite of a prolonged artificially depressed temperature.

Pyrexia in itself, when within the usual bounds of typhoid fever, does not endanger life, for the deaths from the disease do not correspond absolutely to the height of the fever. On looking over the record of forty-five cases that I have observed in hospital and private practice during the last eighteen months, I find that the fatal cases were not those with the highest temperature. The danger in typhoid fever is from the extent of the intestinal ulceration, from perforation, from hemorrhage, or from complications such as pneumonia or disturbances of the brain, and not from pyrexia. Unverricht has recently collected an abundance of evidence to show that danger does not arise from increased bodily temperature.[1]

The effects of chemical antipyretics upon the course and life-history of fever emphasize the fact that pyrexia is only a symptom of the pathological state with which it is associated, and does not in itself constitute fever. I think, then, we are justified in concluding that antipyrine, by depressing bodily temperature, does not favorably modify typhoid fever.

If, then, antipyrine is not useful in typhoid fever as an antipyretic, can we employ it advantageously for any of its other ways of action?

From the skin it uniformly provokes profuse perspiration. This does not add to the comfort of the patient, although it may aid in dissipating bodily heat. As in other conditions of the human system, antipyrine will, in typhoid fever, often cause a rash, whose presence increases the sufferer's discomfort.

Upon the stomach and digestion it exerts no noticeable influence. It is rarely nauseous or otherwise especially unpalatable. It has been found to be an excellent hæmostatic. But no favorable results have been reported from its use in typhoid fever accompanied by intestinal hemorrhage. Antipyrine was employed steadily in a case of typhoid, with frequent, and finally fatal hemorrhages, that was under my observation a year ago in Mercy Hospital, but no beneficial influence was observed upon the bleeding. This is undoubtedly due to its ready absorption from the upper part of the alimentary canal, and its failure to reach the bleeding surface except in a very dilute form through the blood. Nor does antipyrine appear to exert any favorable influence upon the intestinal inflammation.

Antipyrine in therapeutic doses has little or no power of destroying the red blood-cells, as antifebrine, thalin, and many other antipyretics have. If given in very large doses, the skin, and especially the lips, may become livid in color or cyanotic from the formation of met-hæmoglobin. I have seen this effect produced in two cases of typhoid fever from the administration of only fifteen grains. In each of these cases other toxic symptoms were present. The evidence in regard to its action upon blood-pressure is somewhat contradictory. It seems probable, however, that moderate doses increase blood-pressure, and that larger ones reduce it. In typhoid fever I have been unable to satisfactorily demonstrate any effect upon arterial tension from its use. The sense of touch upon examining the radial artery recognized no change. With the sphygmograph I have made too few observations to be able to deduce from them positive evidence. Of three cases from which sphygmograms were obtained, both before and at varying intervals after the administration of the drug, no apparent change was noticed in two, but a slight lowering of blood-pressure, or increased dicrotism, was observed in the third.

It is admitted that the urine is almost uniformly lessened in amount by antipyrine, no matter in what condition of health it is administered. More marked is the diminution of the amount of urea excreted.[2] These effects of the drug in typhoid fever have been confirmed by many observers. They appear to be due to an action upon the kidneys, suppressing the free excretion of urine and urea. For this reason waste matter is apt to accumulate in the blood. I cannot learn that studies have been made in typhoid cases, treated by antipyrine, upon the production or diminution of the extractives and products of complete metabolism, or of their excretion from the system. I believe the toxic effects which have been observed with comparative frequency in this disease from therapeutic doses of antipyrine, are to be in part explained by this action of the drug upon the kidneys. Since many typhoid cases will tolerate very large quantities, it seems probable that this poisoning is due to changes in the action of the tissues, which are not constant, that exist prior to the administration of the drug. Toxic symptoms I have myself seen developed several times in two typhoid patients from ten and fifteen grain doses. The symptoms were a feeling of universal coldness, of great weakness, and of imminent dissolution. The patients appeared ashen in color, the skin was covered with a cold, clammy perspiration, the pulse was quick, small, and soft, the respiration not materially changed in frequency, but was maintained with slightly increased effort. These symptoms showed themselves in half to three-quarters of an hour after the administration of the drug, and reached their climax in another half-hour, and only gradually disappeared. Very considerable lowering of temperature took place; in one case it fell from 102.5° to 97.8°, and in the other from 103.5° to 99.6°. Unfortunately no urinalyses were made either immediately before or after these attacks. The fatal cases of poisoning by therapeutic doses are said to have occurred with symptoms of collapse. But these are not the symptoms which physiologists obtain from the drug when it is administered in toxic doses to lower animals. Then convulsions, opisthotonus, and increased reflex[1] activity are produced. Last year, in another communication upon antipyrin,[2] I suggested the probability that poisoning from therapeutic doses occurred in those persons in whom the kidneys acted imperfectly or were diseased prior to the administration of the drug, and was due to the retention of toxic matter, the product of imperfect or pathological metabolism. The comparative frequency with which such poisoning occurs in typhoid fever is impressive. In the literature at my hand I find records of the development of toxic symptoms in fourteen cases, in four of which there was fatal poisoning. Of these fourteen, ten were typhoids, and of the four fatal ones, three were typhoids. It is evident, therefore, that the danger of such poisoning is greater in typhoid fever than in other diseases. I have used antipyrine in very many more cases of rheumatism, of neuralgia, and of phthisis, than of typhoid, but have never seen ill effects in any other disease. I believe that in typhoid fever, if the urine is unusually scant, and especially if its nitrogenous elements are much diminished in amount, antipyrine should be used with great caution, if at all.

Aside from the chance of the development of toxic effects from antipyrine, its uniform tendency to diminish urinary excretion lessens greatly its utility in the disease. The necessity for the maintenance of a free secretion of urine has been well put by Robin, who insists that patients who from the beginning of typhoid urinate freely recover better and more quickly than others who do not.[3]

Upon respiration antipyrine exerts no especial influence, and in a considerable literature of the subject I find it nowhere claimed that its use diminishes the bronchitis of typhoid or lessens the frequency of pneumonic complications.

Typhoid fever, as was said in the beginning of this paper, is a poisoning of the entire system. Nowhere do we see its toxic effects better than in the symptoms that

[1] Deutsche Medicinische Wochenschrift, Nos. 37 and 88, 1888.

[2] Lion has shown that while urine and urea is lessened, the quantity and quality of the phosphates eliminated are not changed. Le Semaine Médicale, May, 1888.

[1] Contradictory results have been obtained by different experimenters upon its influence on reflex action.

[2] Antipyrine in Rheumatism; its Value and Mode of Action. Read at a meeting of the American Medical Association, 1887. Printed in the Journal of the American Medical Association, July 2, 1887.

[3] Soc. de Biology, 1886.

originate in the nervous system. These point to a progressive stupefication of the central nervous system, and, as in anæsthesia and narcosis, when the full effect of a drug is not obtained, delirium often occurs. Usually the delirium is a stupid one, and is characterized by dream-like mutterings during apparent sleep. But we find more rarely, just as from narcosis by drugs, wild delirium, restlessness, and constant wakefulness produced. Antipyrine has seemed to me to lessen these often-distressing nervous symptoms, except in cases characterized by great general exhaustion, when no good seemed to be effected by it. It has never, however, appeared to be as certain and uniform in its action upon the nervous symptoms as some other remedial agents. The well-known and important analgesic properties of antipyrine are not available in typhoid fever.

Finally, I would draw as a conclusion from my own study of the action of antipyrine in typhoid fever, that it is certainly not a specific for the disease, and that it is of little or no use because of the antipyresis which it produces, and of very limited use because of any of its other modes of action. It certainly cannot replace hydropathic treatment, with which it is so often contrasted. It must be remembered, however, that the chief benefit of the latter is not in its antipyretic effect, but in its stimulating influence upon the nervous system, upon nutrition, upon the circulation, and often upon the excretion of urine.

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REMOVAL OF CYST OF THE MESENTERY—RECOVERY.

By A. N. TALLEY, M.D.,

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On August 26th, last, I was consulted by Miss W——, aged twenty-eight, from a distant part of the State, in regard to an abdominal tumor. She bore a letter to me from her medical attendant, an intelligent physician, in which, after expressing his opinion of the character of the growth, he committed the case to me for ovariotomy. In these views the lady's father, also a practitioner of medicine, fully concurred. The following abridged history of the patient, who, though of delicate frame, presented an appearance of comparative health, was obtained from herself:

About two years ago, and subsequent to an attack of intermittent fever of brief duration, during which she experienced violent pains in the region of the spleen, a slight, movable, and insensitive tumor was discovered in the abdomen, on the left side, on a line with the umbilicus. One year later, in consequence of the gradual enlargement of the growth, medical counsel was sought and ovarian cystoma diagnosticated. As the patient's health was good, and her functions unembarrassed, with the exception of slight menstrual irregularity, no treatment was advised. With the further development of the tumor, however, came the usual disturbances incident to mechanical pressure, which, at the date of her visit to me, had assumed a gravity that demanded relief. When first seen by me the abdomen presented, in size and conformation, the appearance of a woman near the full term of pregnancy. Dulness obtained everywhere, save in either flank, where the percussion note was slightly resonant. Fluctuation was so marked as to leave no doubt of the cystic character of the tumor, which not only filled the abdomen, but occupied the superior portion of the pelvic cavity, pressing the uterus above and to the right of its normal position, though distinctly separable from the latter organ. The urine afforded no evidence of renal degeneration or other serious kidney disorder.

Laparotomy having been determined upon, on August 29th the patient was chloroformed, the abdominal cavity opened, the cyst punctured with a Wells trocar, and three gallons of dark, translucent fluid evacuated, which, on subsequent examination, proved to be slightly albuminous, without trace of echinococci. The adhesions were numerous and strong, and the effort to free the cyst from its visceral attachments by prolonged and careful dissection being only partially successful, it became necessary to sever and ligate portions of the cyst-wall. The pedicle, which was broad and thick, was traced to its origin in the left lumbar region, in close proximity with the second lumbar vertebra, and, as well as could be ascertained, sprang from the mesentery. Its great depth in the abdominal cavity, and its unusual thickness, which necessitated its ligation in sections, suggested the propriety of bringing the ligatures out through the upper part of the incision. The hemorrhage was free, but yielded to hot water irrigation. Keith's drainage-tube was inserted, and the toilet made with strict observance of antiseptic precautions. The uterus and ovaries were healthy.

The shock was profound and protracted, the temperature being subnormal, and the pulse scarcely perceptible for twenty-four hours. Reaction was brought about by the subcutaneous use of nitro-glycerine, with external warmth and active stimulation. On the fourth day the temperature rose to 104° F., and the dressings were soiled with a dark and offensive discharge which made its escape beside the ligature. A flexible tube was inserted, and the cavity washed out with carbolized hot water, causing a speedy reduction of temperature to 99° F. This antipyretic effect of the carbolized irrigations was repeatedly and notably manifested during the progress of the after-treatment.

The subsequent history of the case demands no special or detailed record. Prolonged nausea was relieved by a saline purgative (Rochelle salts), thirst was allayed by warm beef-tea enemata, and flatulence was controlled by the rectal tube assisted by occasional terebinthinate rectal injections.

In six days the wound had healed, save the point from which the ligatures emerged. In twenty-one days the ligatures were thrown off, and in six weeks from the date of operation the lady, with restored health, was enjoying all the comforts of her distant home.

ENDOCARDITIS FOLLOWING CHOREA.

Dr. W. F. Lippitt, Jr., of Charlestown, W. Va., reports the following case: "Annie W——, colored, aged sixteen years. History of inflammatory rheumatism and subsequent 'heart troubles' on both sides of the family. Has herself never had rheumatism. In April, 1888, came to me complaining of pains in the head and stomach, and absence of the menstrual flow. I treated her with tonics and potassium permanganate, as advised then, without result, and without bad effect on the digestive system. She soon developed violent general chorea, which was successfully treated by tonics and galvanism. Recovery from that was followed by sharp pains in the chest and side, succeeded by general anasarca and ascites so great as to seriously interfere with breathing, and only relieved by a combination of calomel, squills, and digitalis. No record of heart lesions at that time was kept. Since then she has occasionally been troubled with shortness of breath, pains around the heart, and dropsy, which, though generally relieved without trouble, has been so great as to necessitate active treatment four times in the last two years. She is now much better than at any time within the last two years, has been free from swelling for a longer time, and is improving without treatment. Present condition is as follows: Apex-beat forcible and diffuse; pulse (after walking), 112 to the minute; area of heart dulness increased; epigastric pulsation auscultation reveals a loud murmur at the apex, with the

first sound continued into the axilla, and perceptible at the back; also at the same time a murmur heard loudest at the base of the heart, and conducted into the vessels of the neck. Urine normal. Has never menstruated. This girl, when fourteen years of age, was brought to me on account of amenorrhœa. The age at which menstruation is said to begin, in temperate climates like ours, is from the fourteenth to the sixteenth year. I have found that in all classes it is the exception for it to be delayed longer than the thirteenth year."

VAGINISMUS COMPLICATING THE THIRD STAGE OF LABOR.

Dr. W. F. Lippitt, Jr., of Charlestown, W. Va., writes: "May 8, 1888, when several miles from town, without my instruments, I was called in to see Belle D——, colored, aged twenty, married, pregnant for the first time. I found that, without any assignable cause, labor had come on prematurely. On examination I found the feet protruding from the os. In the intervals between the pains, I could distinctly feel the movements of the fœtus. I gave ergot to insure contraction of the uterus. The fœtus was expelled without trouble. After waiting for some minutes I examined and found the uterus firmly contracted, and the placenta entirely separate and lying loose in the vagina. In making the examination I found the sphincter vaginæ so firmly contracted as to render it very difficult to get my finger into the vagina. Then, knowing that I was safe in doing so, I pulled with a considerable degree of force on the cord, but, owing to the extreme degree of vaginismus, with no result except the separation of the cord from the placenta. I then gave up in despair, and sent to town for my instruments. But after the messenger had gone I thought of the following plan: I placed the patient in the Sims position, put my left thumb into the vagina, my fingers on the buttocks, and by strong traction succeeded in dilating the vagina sufficiently to introduce my right hand and withdraw the placenta. The woman recovered without trouble. The fœtus was ten inches long, female, bones well ossified, finger and toe nails formed and distinct, eyes open, eyeballs well formed, fœtus perfectly formed with the exception of the head, which was of the variety described by Charpentier as Pseudencephalic."

Dangers of Ear Disease.—Before the Liverpool Medical Institution (*The British Medical Journal*), Mr. Richard Williams read a paper on three cases illustrating the dangers of ear disease. He pointed out that patients and medical men too often neglected chronic discharge from the ear, trusting to it ceasing in time. As a matter of fact, fifty per cent. of the cases of cerebral abscess were due to old-standing ear disease. Mr. Williams's first case was one of otorrhœa and polypus, with disease of the mastoid cells, producing septicæmic symptoms. The second was a case of abscess of the temporo-sphenoidal lobe, following chronic otorrhœa. In the third, thrombosis of the lateral sinus took place, with probably basilar meningitis. In all three the mastoid process was trephined. The first and third recovered, the second died, owing to the bursting of the abscess into the lateral ventricle just before it was intended to trephine over its seat. The diagnosis between abscess and other cerebral affections was difficult. Optic neuritis was not a reliable symptom for this purpose, as it was absent in the above case of abscess and present in the case of thrombosis. The diagnosis of cerebral abscess was obscure. When once made surgical interference presented no difficulty. In cases such as the foregoing, early trephining of the mastoid cells was to be insisted on, so that the whole cavity might be syringed out, and the infection cut off at its source.

Gum chewing and the Eyes.—A Philadelphia physician asserts that chewing gum injures the eyes, causing dimness of vision, and even optic atrophy.

Progress of Medical Science.

Antisepsis in New-born Children.—For the avoidance of septic diseases in new-born children the following rules are recommended by Dr. Miller: 1. With regard to cases of pyæmia, it is not generally in our power to prevent the septic infection of children during fœtal life. Accoucheurs must be particular to enforce rigid antiseptic conditions during the last days of pregnancy and during labor, this applying to attendants, clothing, instruments, the patient, and the accoucheur himself. 2. To avoid pyæmia in the new-born from a gangrenous or putrid condition of the navel, midwives must be carefully instructed as to proper care of the navel wound after the stump has fallen. The cord should be divided with scissors which have been made aseptic, perhaps by passing them through the flame of a spirit-lamp. The ligature must be aseptic, the stump should be washed in a three- or five-per-cent. solution of salicylic acid or boric acid, and then covered with absorbent cotton. One should endeavor to obtain mummification of the stump as soon as possible, and for that purpose only dry dressings are indicated. Should the navel suppurate either before or after the fall of the stump, it should be carefully washed with a weak solution of carbolic acid, dried, and then receive an application of a two-per-cent. solution of nitrate of silver. After this only antiseptic powders should be used. 3. Since gonorrhœal virus appears to be responsible in some cases for inflammation of the navel, the latter may be avoided by using a two-per-cent. solution of nitrate of silver, the same as Credé has recommended for the eyes to prevent gonorrhœal ophthalmia. In any case in which the mother has leucorrhœa this application should be used, without fail, for the eyes and for the navel. 4. Aphthæ are found in the mouths of almost all children in foundling asylums; some of them have it when they enter, and others get it after they have entered, for it is almost impossible to secure a careful cleansing of the mouth in every child in a hospital after each nursing. Not infrequently the wet-nurses who nurse two babies neglect to cleanse their infected nipples sufficiently, and transmit the disease by this means from one baby to the other. The crowding of children in public institutions favors the extension of such diseases. In atrophic children, after the aphthous membranes have fallen there frequently remain ulcers or fissures in the mucous membrane, which act as avenues for the passage of septic material. To avoid infection, it is desirable in hospitals to insist upon the washing of the mouth at least once daily with an antiseptic solution—perhaps of boracic acid—after which the aphthous membrane should be touched with a solution of resorcin, permanganate of potash, boracic or salicylic acid, upon absorbent cotton, no piece of cotton being used for more than one application. The ulcerated portions should be touched with the nitrate of silver solution. 5. Since infection may be transmitted by the folds of the anus, it is essential in cases of erythema ani and rhagades that there also should be antiseptic treatment of these parts. The same remark applies to intertriginous patches and lesions of the skin of the head or any other portion of the body which may have been produced during labor. 6. The use of antiseptic precautions is also necessary in vaccination. In foundling asylums, where vaccination is performed soon after birth, erysipelas and phlegmonous inflammations have become much less common where antisepsis is employed. 7. The greatest care must be used in washing the skin of newborn infants on account of its ready absorbability. A two per-cent. solution of carbolized oil has been known to produce the most violent symptoms of intoxication. Salicylic acid is also too poisonous when used in solutions of ordinary strength. For very young children boracic acid is much the safest agent for disinfecting purposes, and its general use is therefore to be recommended to midwives. —*Archives of Pediatrics*, December, 1888.

THE USE OF ALCOHOL IN MEDICINE.—According to Professor Binz, of Bonn, alcohol in small doses increases the arterial pressure, in large doses the opposite effect is produced. Alcohol increases the activity of the left ventricle of the heart, and diminishes the moments of rest, and increases the respiration. Alcohol in moderate doses is eliminated by the lungs and kidneys. Alcohol burns up into carbonic acid gas, and water taken into the system. This action produces heat, and is of value to temporarily stimulate and strengthen the system. Alcohol does not increase oxidation. Only such substances can be rightly considered as nutritives which promote the heat of the body without producing any injurious accompanying symptoms. It is known that alcohol in large doses increases the decomposition of albumen, and hence, in many cases of severe illness, tends to hasten the fatal result rather than retard it. Alcohol has the power to reduce the temperature of the body in certain conditions. Moderate doses which do not produce the least symptoms of intoxication will cause a fall of temperature of several degrees. The habitual use of alcohol deadens the heat-reducing property until it becomes no longer observable. Narcotic doses of alcohol reduce the temperature several degrees, and this reduction remains for several hours. All the causes of this fall of temperature are not understood. One of them is an enlargement of blood-vessels of the skin, and an increased radiation of heat. Alcohol seems to be a drug of great value in therapeutics, but it must be given with great discrimination. In a healthy man it is always an injurious drug. A habitual beer-drinker is as much an alcoholist as a habitual whiskey-drinker. It is the duty of physicians to support every effort to break up the indiscriminate use of alcohol as a beverage or medicine, and insist that it be used with therapeutical precision. These views were sustained by the members of the congress, and a general agreement was reached that all possible caution should be observed in the use of alcohol as a medicine, and its changing effects on different individuals.—*The Therapeutic Gazette.*

THE ACID PRINCIPLE OF THE GASTRIC JUICE.—Dr. V. Poulet has conducted a series of experiments with a view to obtain a better knowledge of the gastric juice. His conclusions are given, as follows, by the Paris correspondent of the *Therapeutic Gazette:* 1. The gastric juice of adult omnivorous animals, healthy man, for instance, contains in the first part of digestion hippuric acid alone. Near the end of digestion tartaric acid also makes its appearance. As an exception the two acids may be found, in dyspeptic subjects, present together, from the beginning of the digestive process. 2. The stomachs of all young animals, before weaning, contain almost no other acid than tartaric. 3. All adult carnivora, dogs included, have free tartaric acid in their stomachs. Hence dogs should not be chosen for comparative gastric-juice investigations and experiments; but pigs should be preferred, owing to the similarity of their dental and digestive system. 4. The gastric juice of man, sick or well, never was found, in the experiments tried, to contain lactic or sarcolactic acid; the same was true of animals. 5. Hippuric acid extracted from the gastric juice possesses all the chemical properties of the same acid found in the urine of herbivorous animals. But tartaric acid of like origin somewhat differs from the vegetable acid. It will, for instance, effervesce with sulphuric acid, when heated, and present otherwise some of the racemic acid (para-tartaric) characteristics. 6. The behavior of dialyzed gastric juice with colored reagents is not at all that of free muriatic acid, but that of hippuric and tartaric acids or their acid salts. 7. The intestinal secretion helping to complete the digestive process is invariably acid, and is rendered so by a tartaric acid of the variety already noticed.

ANTIPYRINE IN RHEUMATISM.—Dr. Henry Sokotowski, of Cracow, has made a number of experiments with antipyrine in the treatment of articular rheumatism. Of 86 cases observed by him, 68 were accompanied with moderate fever, 18 were without fever. In the former a complete cure was obtained 29 times, or 42.6 per cent.; in the latter, 7 times, or 18.8 per cent. In the whole number of cases a cure resulted 36 times, or 41.8 per cent. The pain diminished after a few grammes of antipyrine had been taken, and very often disappeared after two or three days, less frequently after a longer time, presenting at the same time fluctuations in its intensity, although after every dose some relief was observed. The swelling continued sometimes longer than the pain. The temperature fell to the normal on the third day at the furthest. The duration of treatment was, on the average, 19 days in the cases with fever, and 32 days in the apyretic cases. The cases in which a complete cure was not obtained were divided into the following categories: 1. The pain and swelling ceased temporarily, but if the drug were withdrawn they reappeared, and afterward the remedy had no influence on the illness (six cases). 2. The pain and swelling ceased temporarily, but returned in the same or in other joints, in spite of the continued administration of the antipyrine (eight cases). 3. The pain diminished temporarily, but the swelling did not disappear (five cases). The drug exerted no influence on the course of the disease in twelve cases. Few or no unpleasant effects were observed during the administration of the remedy. Comparing the results of the treatment of articular rheumatism by antipyrine and salicylic acid, the author found that a cure was obtained by antipyrine in 41.8 per cent., and by salicylic acid in 31.8 per cent. Dr. Sokotowski concludes as follows: 1. Antipyrine deserves more the name of a specific remedy in rheumatism than salicylic acid, because it surely removes all signs of rheumatism, acute and chronic. 2. Its analgesic action, positively confirmed in neuralgia, in hysterical pain, and in tabes dorsalis, by Guttmann, Strzeninski, Sée, and others, very seldom fails. 3. The unpleasant effects very often observed during the administration of salicylic acid, and dangerous in heart diseases, are very rare when antipyrine is given, and therefore do not limit the application of this valuable medicine.—*Przeglad Lekarski*, No. 42, 1888.

SCHEUERLEIN'S ALLEGED CANCER BACILLUS HARMLESS.—This so-called pathogenetic microbe has been thoroughly investigated by Dr. Van Ermengen, who states that he finds it to be entirely inert. Having made pure cultures of the microbe, he injected it intra-venously into dogs, cats, rats, guinea-pigs, etc., with absolutely no results. Even the injection of so large a quantity as 31 minims gave no trouble. Dr. Van Ermengen repeats that the so-called cancer bacillus is a micro-organism very common in dust, air, soil, etc., and is identical with the *bacille rose* found in impure cultivations of bacillus tuberculosis.—*The St. Louis Medical and Surgical Journal*, December, 1888.

SURGICAL TENSION.—Mr. Bryant summarizes his lectures on tension as met with in surgical practice, as follows (*The Lancet*): 1. The pain associated with every form of inflammation of the bone or of its periosteal covering is due to tension, and the severity of the pain is a fair measure of its intensity. 2. In acute inflammation of the bone or of its periosteum, tension is the chief cause of necrosis; and in the subacute and chronic forms it is a potent cause of their chronicity, as well as of the destructive changes which, as a rule, follow. 3. The relief of tension, wherever met with, when the result of inflammation, is an important principle of practice which should always be followed. In bone the principle is most imperative, on account of the difficulties under which natural processes act in that direction, by reason of the absence of elasticity or yielding in bone, and by reason of the anatomical arrangements of its vessels which favor blood stasis. 4. To relieve tension in the softer tissues of the body, the local application of leeches, local or general venesection, acupuncture, aspiration, punctures, and incisions may be requisite; whereas, to carry out the same

practice in endostitis or periostitis, subcutaneous or open incisions down to the bone, and the drilling, trephining, or laying open of bone by a saw, may be required, the choice of method having to be determined by the requirements of the individual case. 5. In the early or hyperæmic stage of inflammation of bone, before destructive changes have taken place, experience seems clearly to indicate that the relief of tension—as indicated by a dull, aching pain, etc.—by means of drilling or trephining into bone, may arrest the progress of the disease, and help toward a cure by resolution; whereas, in the exceptional cases in which this good result does not take place, suffering is saved and destructive changes are limited. 6. In articular ostitis of every kind and variety, and in every stage, this mode of treatment cannot be too strongly advocated, as tending toward the prevention of joint disease. 7. In acute or chronic abscess of bone, diaphyseal or epiphyseal, the abscess cavity must be opened as any other of the soft parts, drained, and dressed in the most appropriate way—the principles of treatment being the same in hard or soft tissues, although they are modified by the anatomical conditions of the parts.

Encysted Stone and its Removal by the Supra-pubic Method.—At a late meeting of the Clinical Society of London (*The British Medical Journal*), several cases of encysted calculus removed by supra-pubic lithotomy were reported. Mr. Fenwick read notes of the first case. The patient had been under the care of Dr. Hine, of Leytonstone, and the symptoms had lasted eight years. The calculus could be felt bimanually, and was subsequently discovered to be hour-glass in shape. The smaller piece (one ounce and a half) was found projecting into the bladder at the level of the left urethral orifice, and the larger portion (four ounces and a half, the size and shape of a large hen's egg) lying in a diverticulum outside the back and base of the bladder. These two portions were connected by a very slender neck. The vesical piece was easily snapped off, leaving the neck protruding from the threepenny-piece-sized orifice of the diverticulum. The position of the opening rendered much dilatation of it dangerous. It was impossible, therefore, to extract the encysted portion entire. Attempts to crush it, by means of lithotrite or forceps, failed. A chisel was guided through the orifice of the diverticulum and laid upon the stone; elastic counter-pressure was afforded by Petersen's rectal balloon. The calculus was then cut through by repeated blows with a mallet. After many shiftings of the pieces and sections in every direction, the stone was chiselled into sufficiently small fragments to allow of their being extracted through the orifice. The wound rapidly healed, and the patient left for the country in six weeks without an untoward symptom. The second case was reported by Dr. J. B. Browne. The patient was a gentleman sixty-eight years of age, seen for the first time last June, with the following history. Lithotrity had been performed five times in less than two years; the first operation was in August, 1886, the last in April, 1888. The earlier operations had only given temporary relief from very distressing symptoms, and the last one had not been followed by any improvement. All the urine was passed by catheter hourly, night and day, and there was constantly recurring intense vesical spasm. On sounding the bladder a stone was detected lying apparently on the floor of the neck of the bladder; it was found very easy to pass over this stone, or rather, stony surface, into the vesical cavity which lay beyond without noticing any calculous matter. The cavity of the bladder was entirely free from stone. Nothing could be felt by the rectum, except a moderately enlarged prostate. The history of the case, the feebleness of the patient, and the need for free drainage of the bladder, determined the choice of operation, and on July 3d Mr. Buckston Browne opened the bladder above the pubes. Directly the finger entered the bladder it encountered, immediately underneath the opening, a stony surface lying level with the surrounding tissues. It was evidently a stone firmly embedded in the floor of the bladder, immediately behind the prostate. The calculus was lifted out by a long and narrow scoop; the finger then passed into a pocket, which went downward and forward toward the rectum, and the right fore-finger introduced into the rectum was only separated by a thin septum from the left fore-finger passed into the vesical pocket. The stone was apparently phosphatic throughout, and weighed a little over a fourth of an ounce. The patient promptly recovered.

Modern Methods of Treating Syphilis.—Dr. Schwimmer has published a comprehensive paper on the modern treatment of syphilis, of which the following *résumé* is given in the *New York Medical Journal*, November 17, 1888: The subject is treated under three headings: 1. The preventive or abortive treatment of syphilis. 2. The methodical treatment of syphilis; and 3. The duration of treatment. The author is a firm believer in the specific nature of the infection and the duality of the soft and hard chancre. He is not an advocate of the excision of the chancre, believing that in most cases the induration is the primary expression of constitutional infection. The early treatment of the disease is advocated in order to prevent the worst after-effects of the dyscrasia. If the sclerosis is not well marked at first, a purely local treatment may be employed during the first three or four weeks. If a well-marked initial lesion is present at the time of the first examination, general treatment should be begun at once. For local treatment caustics should not be used; salol has been found efficacious to promote the healing of the ulcer, and mercurial plaster for the induration. Mercury is the most reliable means for combating the disease, and can be used either internally or externally, preferably the latter, either by inunction or injection hypodermically. The various salts and combinations of mercury are fully considered in their action and mode of administration. Corrosive sublimate is preferred for internal administration, particularly in pill form. Calomel is useful in the treatment of children, and the following formula is commended: Calomel, Dover's powder, each 1½–2 grains; sugar of milk, 45 grains. Divide into ten powders. Of these powders, two to three may be given daily to a nursing infant, and six to nine to a child over one year old, and their use continued for four to six weeks. The protiodide of mercury is less energetic than the bichloride, but useful in slight relapses, while we are cautioned against the use of the biniodide. Tannate of mercury is a reliable salt for internal medication, more active than the sublimate, but not so efficient as the inunction method of treatment. It causes but little disturbance of the digestive tract, and can be administered for a long time in the dose of one grain and a half two or three times daily, either in solution or in pill form. The treatment by mercurial fumigation is not regarded with favor, on account of its unhandiness. Mercurial baths are of little service in the treatment of syphilis in adults, but very good in that of congenital syphilis in children, two or three baths a week being given, each containing from eight to forty-five grains of the bichloride, according to the age of the child. Special emphasis is laid upon the inunction treatment of syphilis, some forty-five grains of blue ointment being rubbed each day into the non-hairy parts of the body. Thirty to sixty rubbings are about as many as can be prudently employed in one series, and then they should be stopped for a while, some preparation of iodine being taken meanwhile. The oleate of mercury is not so active as the blue ointment. The mercurial soaps of Fanta, Unna, and Oberländer form excellent substitutes for the mercurial ointment and act very promptly. The treatment by hypodermic injection has been tried by him, the various proposed solutions having been employed from time to time. It is a valuable method where the physician wishes to have complete control of the treatment, but does not take the place of the older methods. The treatment by one or other form

of mercury should be continued until the symptoms of the disease have disappeared, and should be thoroughly carried out. The iodides are regarded as rendering good service after a thorough course of mercury. The iodides of potassium, ammonium, and iron are those specially useful. The "mixed treatment," so called, is not considered favorably; better results are to be obtained by the separate administration of the drugs. But space will not permit us to go further in abstracting from this practical little work, and we will take only enough to give the author's two summaries, as follows:

Summary of the use of mercury.—a. The most reliable preparation and the most lasting in its effects is the blue ointment, which should be used, where possible, from the beginning of the treatment. *b.* The subcutaneous injection of mercury is next in reliability, but must be used with caution. The least soluble preparation should be used when there are gummatous or ulcerative processes to combat, or an energetic treatment is necessary on account of parenchymatous syphilitic affections. In the slighter forms of syphilis the more soluble preparations may be used. *c.* The mercurial soap and Unna's mercurial plaster-muslin are very useful, as is also the tannate of mercury. *d.* As a preparatory course for the use of the stronger preparations of mercury, the bichloride of mercury may be given in pill or solution. *e.* As intercurrent medication, between two courses of either inunctions or hypodermic medications, the protiodide of mercury should be used. *f.* The constitution of the patient should guide us in the choice of our remedies, whether we shall use a stronger or a weaker preparation or dose.

Summary of the general treatment of syphilis.—1. Syphilis is a chronic disease, and requires a long-continued course of treatment. 2. Mercurial treatment should be commenced as early as possible in cases with marked onset; in slighter forms somewhat later. 3. Mercurial treatment should be continued for two or three months. Then the iodide should be given for two months. 4. After four or five months' unbroken treatment, a pause of two or three months should be made. Any local lesions should be treated by local treatment. 5. In relapses the same course of treatment should be followed, only of shorter duration, say three months; if no relapse occurs within the first six months after the beginning of treatment, the second course can be deferred until the eighth to the tenth month, reckoned from the beginning of the disease. 6. The treatment with decoctions is to be employed in diseases of parenchymatous organs if such do not yield to a second course of mercury and iodides. 7 and 8. Balneotherapy and hydropathy are useful at times as final methods of treatment. 9. If the disease continues into the second year, in spite of treatment, a two-to-three-months' course of mercury and iodide is to be gone through with, or one of greater duration if marriage is proposed. 10. Generally speaking, after a year and a half to two years of well-directed and early-begun treatment, the result will be highly satisfactory.

THE MICROBES OF PYÆMIA AND SEPTICÆMIA.—In the St. Petersburg Alexander Hospital, Dr. L. Besser has made numerous cultivations of microbes taken both from the blood and pus of living persons and bodies of the dead, with the object of determining which of the various microbes are the cause of the disease. In the first case he examined 23 cases of pyæmia in part following typhoid and part traumatic. Among these he found, on the living, microbes in the pus twenty times; in the blood out of 12 cases eleven times; and in the serous fluid two times. In pus from the cadaver he obtained positive results seventeen times. In the blood of 14 cases nine times, as well as in various organs. As regards the species of microbes, in 8 cases staphylococci were met with, in 14 cases streptococci, and in 1 case both kinds. He draws the conclusion that pyæmia is a result of invasion of the system by micro-organisms, that either the staphylococcus or the streptococcus may be the offender, and that these are identical with those generally met with in abscess. He also investigated 22 cases of septicæmia, all of traumatic origin. In the whole, streptococci were met either in the blood or pus. In 4 cases he found them in blood during life, but in 12 others his search was not successful. In 15 cases *post mortem* ne only found them in the blood in 7; but in 18 cases in which the organs were examined he discovered them in 16. The urine was further tested in 4 cases, with a positive result in 3. From these investigations the author draws the not unnatural conclusion that in septicæmia it is the streptococcus alone that is at fault.—*The Medical Press.*

EFFECT OF GALVANO-PUNCTURE ON THE SAC OF AN AORTIC ANEURISM.—At a late meeting of the Pathological Society of London (*The British Medical Journal*, November 24, 1888), Dr. Ralfe exhibited a specimen, showing the effect of galvano-puncture on the sac of an aortic aneurism. The patient was admitted under Dr. Ralfe's care in September, 1887, into the London Hospital, and died in August, 1888. When admitted, the aneurism had already made its way through the cartilages attached to the sternum, and the skin was already assuming a deep livid hue, while the pulsation was extreme. It was considered that the aneurism would shortly rupture externally. To relieve the extreme pulsation, Dr. Ralfe suggested galvano-puncture, which was performed by Mr. Mansell Moullin. Improvement followed the operation, the swelling subsided and became harder, and the skin lost its livid hue. This improvement lasted some time, but presently the pulsation returned, and the patient was troubled with a violent paroxysmal cough. Galvano-puncture was again resorted to, and again the pulsation diminished and the tumor became harder, while the cough disappeared. In all, galvano-puncture was resorted to thirteen times, and always had the effect of giving relief to the patient. Finally, after nine months of treatment, a pustule appeared over the seat of an old puncture, and from that time adhesion took place between the skin and the tumor, and perforation slowly ensued; but, instead of a violent hemorrhage, comparatively slow oozing took place, and the patient gradually sank from weakness, without experiencing shock or pain. Dr. Ralfe claimed for gal vano-puncture, in suitable cases, (*a*) prolongation of life in rapidly progressive cases; (*b*) relief of pain, undue pulsation, and of paroxysmal cough; (*c*) the probability of an almost painless death, owing to the slow oozing from the thickened sac, instead of sudden rupture, which, if it occurred internally, must be for a short while extremely painful.

DIFFERENCES BETWEEN CHILDREN AND ADULTS IN REGARD TO MORBID ACTION, AND THE EFFECTS OF TREATMENT.—From a recent address by Dr. W. H. Dickinson (*The Lancet*, November 3, 1888) we take the following conclusions: Children differ from grown people in their greater susceptibility both to exhaustive and recuperative influences. Such of their diseases as are of the nature of growths partake of the rate of progress which belongs to the period of development. This applies to the fibroses as well as to isolated tumors, though the fibroses are far more infrequent than afterward. Many inflammatory disorders, particularly of the brain, are more common in childhood than later, but with regard to many inflammations the power of recovery is greater. Those of the lungs are more frequent and cause more deaths, but in the individual the prospect is better. Acute rheumatism is comparatively infrequent, but when it occurs it brings greater danger to the heart. Some febrile complaints are more frequent, and some less so than afterward, but, as a rule, their proportionate mortality is less. There are special differences in the action of drugs, the most important of which is the greater influence of alcohol for good and evil. Finally, children respond to treatment, as they often succumb to disease, more readily than do older patients, so that with them our responsibility is the greater.

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OUR CITY'S MEDICAL CHARITIES.

THE city of New York has nearly 14,000 persons under the charge of its Commissioners of Charities and Correction. During the course of a year, between 30,000 and 40,000 persons come under their control. Most of them are sick, injured, or insane. The humane and skilful supervision of this vast number of the suffering is no easy matter. In a city like ours, in which politics is the first and fitness the second consideration in determining the selection of officers, the grossest abuses have at times existed. Improvements, however, have steadily been made, and although in many cases the special system is too vicious ever to be made really satisfactory, yet there is promise of better management each year.

One of the most useful agencies in promoting reforms in this field has been the Visiting Committee for Bellevue Hospital and other public institutions; a committee which works under the auspices of the State Charities Aid Association. Each year a report is published which has, almost without exception, shown the results of intelligent and conscientions examination of the city's various medical charities.

The last report, for the year 1888, contains a number of interesting criticisms. The city lunatic asylums have always come in for a large share of complaints. Every year the number of lunatics admitted exceeds by one or two hundred the number discharged. The result is a steady accumulation of pauper lunatics. Even assuming that our city population increases at the rate of 40,000 to 50,000 annually, the proportionate increase of lunatics is twice what it ought to be.

One of the worst institutions under the control of the Department of Charities and Correction is the Workhouse. It is to this place that "ten-day" offenders, the drunk, the destitute, and old "rounders" are sent. Nearly 25,000 people are sent up by the courts and city authorities during the year, the majority of the women, at least, being old offenders. The hospital for the accommodation of the sick in this floating population of nearly 3,000 has just fifty-six beds, and there are very often twice as many patients.

The Maternity Service of Charity Hospital presents a most creditable record. In the past year there were 349 confinements, with 3 deaths of mothers, or $\frac{8.6}{100}$ per cent.; 13 babies died, and there were 27 still-births.

Perhaps the most unpleasant showing of all is that of the Infants' and Children's Hospitals on Randall's Island. These institutions, which are under the charge of the same medical officers, in 1887 treated 1,679 patients. In the Infants' Hospital the simple record is: "Cared for during the year, 975; died, 356." The infants who are admitted without the mother are known as "orphan babies." Among this class the mortality is frightful, and was even greater in 1888 than in 1886 or 1887. Among 534 orphan babies, 325, or over sixty per cent., died. It is stated that only one "orphan baby" admitted to the Hospital in the past eighteen months has reached the age of one year. The Babies' Hospital on Randall's Island is plainly no health-resort.

In conclusion the Committee says of Bellevue Hospital: "The repairs and improvements at Bellevue Hospital are not altogether matter for congratulation, for the unfitness of the building for hospital purposes, its defective ventilation and construction, can never be wholly done away. Nearly fifteen years ago, a special committee of the State Charities Aid Association made a report setting forth reasons for the reconstruction of the hospital, and offering to furnish plans for the same. We regret that this measure has not been persistently urged upon successive Boards of Commissioners; if all the money expended in patching up the Hospital for the past fourteen years had been used to rebuild it, we might now have a new Bellevue, built on scientific principles."

We can hardly agree with this opinion. The Hospital is massively built, and can be now thoroughly and scientifically ventilated. Asepsis, which is the main thing, is possible in any hospital, and has been attained in Bellevue. No better work in surgery is recorded in the most scientifically constructed hospitals than is being done at this institution now.

CHILDBEARING AND THE PROCESSES OF NUTRITION.

THE puerperium is usually regarded as including only the period from the birth of the child to the establishment of a normal condition of the generative organs, *i.e.*, six to eight weeks. French writers, notably Tarnier and Monneret, make it include the whole period from conception to the reappearance of the menses, or even the end of lactation. Auvard divides this time into (1) the puerperality of gestation, (2) of parturition, (3) of regression, (4) of lactation. Such an extension of the word puerperium is unnecessary, confusing, and without etymological justification; but the division itself is convenient, and affords M. Auvard an opportunity (*Gazette des Hôpitaux*) to present concisely some facts regarding the relation of these periods to nutrition, and especially to obesity.

Nutrition, says Auvard, didactically, is composed of four successive acts: Absorption, assimilation, disassimilation, and elimination. Here M. Auvard is more concise than correct, for he does not allow for the influence of that part of the food which, with very little change, is broken up and rushed through the kidneys as urea. However, not to be too critical, Auvard's classification is doubtless sufficient for his purpose at hand. During childbearing, according to Auvard, and no one will dispute him, there is a general slowing of nutrition. Absorption is less active, as shown by anorexia and vomiting; assimilation is

slower, as shown by anæmia and a greater tendency to scrofula and phthisis. The imperfect disassimilation tends to obesity, biliary lithiasis, and osteomalacia. Of all these, Auvard believes that obesity is the condition most surely promoted by gestation. The process of elimination is also lessened during gestation; at least, so far as the kidneys, and perhaps the skin, are concerned.

The urine, according to Tarnier, increases in amount at first, but the solids excreted decrease, excepting only the chlorides. "Puerperal eclampsia is the grave in which the inactive emunctories bury their bad work."

The period of parturition is too short in itself to modify especially nutrition; but the subsequent period, that of puerperal regression, is one in which all the nutritive processes are more active. The quantity and density of urine augments, the body-weight falls about ten pounds, and the *gravis odor puerperii* appears as a result of the over-active cutaneous elimination. When regression is finished, the lactation-period proper may be said to have begun. During this time absorption and elimination are very active, but it is claimed that assimilation and disassimilation are slow. There is now a predisposition to anæmia, and, in some persons, to tuberculosis.

The various changes above indicated are not, as a rule, very marked, and are not often pathological. The "tachyatrophy" and "bradyatrophy," as they have been called, are physiological adjustments of the woman to the new conditions.

The general effect upon women of childbearing is no doubt to promote the development of obesity in greater or less degree. This depends, however, somewhat on race and condition in life. The obesity from childbearing can be kept off by self-denial as regards food, and indulgence as regards exercise.

COCAINE-CHLOROFORM NARCOSIS.

THE majority of surgeons still employ a simple form of anæsthesia, *i.e.*, they use either chloroform or ether alone. For special operations a preliminary injection of morphine is used. But the preliminary injection of atropia, cocaine, or the administration of bromide, is probably nowhere systematically adopted. There is a disposition, however, to make surgical anæsthesia a more complex affair than has usually been done; and this tendency is strongly favored by Professor Obolinski, of Cracow, who comes forward (*Wien. med. Wochenschr.*, Jahr 1., Nos. 15 and 16) with a "new method of mixed narcosis."

This consists essentially in the combined use of cocaine and chloroform. Obolinski injects, either before or after the anæsthesia is obtained, from one to three centigrammes of cocaine; or he injects in the neighborhood of the seat of operation, and during its progress, from three to seven centigrammes. Cocaine is used, on the ground that it is a complete antagonist of chloroform and chloral. This, however, is not strictly true, for cocaine is rather a general exciter of the central nervous gray matter than a direct and powerful stimulator of the heart, while its stimulant effect upon respiration is not to be depended upon.

Obolinski claims, however, that this mixed narcosis is an advantage, because it secures anæsthesia with the use of less chloroform. Here, too, it may be said that partial chloroform narcosis may be more dangerous than if a full amount were obtained.

It is further claimed that vomiting is prevented by the cocaine-chloroform narcosis, and that the patients have few disagreeable after-effects.

CIGARETTE-SMOKING BY BOYS.

"THE only serious harm that I have seen from smoking tobacco has been caused through the smoking of cigarettes by boys," is an observation made recently by a physician of large experience in this city. We occasionally receive communications which confirm this opinion, and show that the habit of cigarette-smoking among boys is becoming more common and is working most pernicious effects. The rivalry among cigarette-makers is now so great that prizes are offered to those who smoke the most. Unfortunately, the prizes are usually of the cheap and gaudy character that appeals most to boyish tastes; and, in fact, it is affirmed that boys are the chief prize-winners. There should be some law or ordinance forbidding the sale of cigarettes to boys. As matters are going now, cigarette-making rivals the liquor-trade in its pernicious influence upon the rising generation.

THE BEST TWENTY-FIVE DRUGS.

OUR esteemed contemporary, *The American Practitioner*, has discussed with its usual intelligence and acumen, the editorial published in THE MEDICAL RECORD, some weeks ago, upon the question "Is the Practice of Medicine a Failure?" Our contemporary objects to the exclusion of surgery and hygiene from the practice of medicine, and its objection is, of course, to a certain extent, valid; for the general practitioner includes both these branches in his work. Our inquiry was, however, directed more especially as to the utility of medical intervention in the course of acute and chronic disease. We intimated that we did not take a pessimistic view of this subject, but rather the contrary. Still, it is apparent that medicinal treatment is not efficient in any degree proportionate to the amount of medication, the extraordinary number of our drugs, or the immense industry bestowed on our materia medica.

It is quite probable, indeed, that with twenty-five drugs the medical art could be carried on with just as much, if not more, success. Some people with idiosyncrasies or unusual fastidiousness might suffer; but this could be more than supplemented by a diminution in excessive and dangerous dosing.

It would be interesting to learn from practising physicians what the twenty-five best drugs are. We assert, confidently, that twenty-five is a minimum number, and that the bumptious heretics who, in days of old, claimed that three drugs—opium, mercury, and potash—were enough, knew neither the science or practice of medicine.

The following list has been suggested to us as representing the soul of the Pharmacopœia: 1, opium; 2, mercury; 3, iodides; 4, quinine; 5, chloroform; 6, ether; 7, sulphate of magnesia; 8, salicylic acid; 9, aloes; 10, alcohol; 11, bromides; 12, iron; 13, chloral; 14, castor-oil; 15, digitalis; 16, arsenic; 17, colchicum; 18, ipecac; 19, aconite; 20, strychnia; 21, cocaine; 22, ergot; 23, bicarbonate of potash; 24, mineral acids; 25, nitrites.

Pepsin is a widely used remedy, but it can hardly be regarded as a drug, and it is very possible that, on the whole, it does more harm than good by pandering to a weakness rather than attacking its roots. Iron is another remedy whose value, except as a mineral food, is problematical.

Naturally, the best twenty-five drugs will differ somewhat in accordance with climate and prevalent diseases; but we should say that the foregoing list was a fairly correct one.

THE MINERAL WATERS OF THE YELLOWSTONE PARK.

EVERYONE familiar with European watering-places and their American equivalents knows, and many doubtless regret, the great superiority of the transatlantic over our own sanitary resorts. Yet no one will contend that nature has been partial to the older country in bestowing her favors. It is simply an affair of human development, our own resources having been as yet subjected but slightly to the modifying effects of intelligent enterprise.

The Yellowstone Park affords a good illustration of this neglect on our part to improve upon great natural advantages. Physicians who have visited that extraordinary tract of land have been struck by the abundance and variety of its mineral springs; but until quite recently reliable information concerning this multitude of hot and cold springs was not obtainable.

From the current issue of the *Epoch* we learn, however, that a step in the right direction has now been taken. It appears that in Bulletin No. 47 of the Geological Survey the first official instalment of reliable information has been published. The report in question contains analyses of forty-three of the more noteworthy and typical waters of the Yellowstone Park, together with a full account of the analytical methods employed. The analyses were made by Professor F. A. Gooch and J. E. Whitfield, in the laboratory of the Survey at Washington, a fact which will vouch for their accuracy.

The temperature of the Yellowstone Park springs shows a wide range from great cold up to the boiling point. As for mineral ingredients, there is also considerable variety. Astringent waters, carbonated saline springs, highly siliceous waters, lithiated and arseniated waters, and many others are found in abundance. The Devil's Ink Pot, near Mount Washburn, a nearly boiling spring, is said to be unique among mineral waters. It contains, along with other ingredients, nearly forty-eight grains of ammonium sulphate in every quart. It is notable for its contents in free sulphuric, hydrochloric, and boric acid, and it carries appreciable quantities of lithia, of alum, and of sulphuretted hydrogen.

Continuing, the *Epoch* says that—

"Among the geysers and hot springs generally there seems to be a good deal of a family likeness. As mineral waters go, they are not very heavily charged with mineral matter; carrying, as a rule, less than two grammes of dissolved solids to the litre, or under 120 grains to the gallon. The Chrome Spring reaches nearly three grammes, however, and the Devil's Ink Pot, the extreme case in the present series, has three and four-tenths approximately. The waters of Ballston and Saratoga range from four to six times as strong, while many of the most noted Virginia Springs are much weaker.

"All of the Park waters are, relatively to their total contents, decidedly siliceous; and to their deposition of dissolved silica the curious geyserite formations are due. Most of them contain definite amounts of borax, nearly everyone contains lithia, and in almost every hot water there are very perceptible quantities of arsenic. The latter element is more abundant in several foreign waters of high repute, but the proportions found in the geysers are not to be despised. Iodine seems to be universally absent, and bromine is only found in a few cases in very small amounts. Neither are sulphur waters conspicuous in the list of waters analyzed. The remaining constituents of the geyser waters are the almost universally diffused sulphates, carbonates, and chlorides of lime, magnesia, and the alkalies. None of them are notably chalybeate."

The precise indications for the employment of these various waters of course remain to be determined by clinical observation. From what has just been published, it would appear that the springs will be found useful in the shape of baths rather than as beverages.

In any event, it is safe to say that the Yellowstone National Park will, in course of time, become as well known for its sanitary advantages as for the marvellous scenery and imposing natural formations in which it abounds.

News of the Week.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—In addition to the papers already announced, the following have been promised for the meeting of the New York Medical Society, beginning in Albany on Tuesday, February 5, 1889, at 10 A.M.: "The Treatment of the so-called Perityphlitic Abscesses," by Robert F. Weir; "Basedow's Disease," by H. R. Hopkins; "Cranial Measurements in Twenty Cases of Infantile Cerebral Hemiplegia," by Edward D. Fisher and Frederick Peterson; "Cases Illustrating the Curative Effect of Convex Glasses in the Strabismus of Young Children." "On Some of the Minor Types of Pneumonia," by T. E. Satterthwaite; "The Practical Application of Acoustics to the Physical Signs of the Human Chest in Diagnosis," by J. R. Leaming; "The Importance of the Early Recognition of Cancer of the Cervix Uteri," by Henry C. Coe; "Office Photography with the Flash Light," by Henry G. Piffard; "Inferior Dental Neurectomy," by J. H. Glass; "Vaginal Hysterectomy," by James B. Hunter; "Septic Poisoning in Early Life," by Henry D. Chapin; "Amblyopia in Diabetes," by W. O. Moore. Gentlemen who propose to discuss any of these papers will confer a favor on the Business Committee by sending their names to Dr. Roosa, 20 East Thirtieth Street, New York, without delay.

LIVING WITHOUT KIDNEYS.—A curious story, which is characterized by our English exchanges as decidedly "American," comes from Philadelphia (*Medical Register*). A patient suffered from disease of the right kidney, which, together with the spleen, was removed by laparotomy. After these two organs had been removed, it was found that he had no other kidney. When the effect of the ether had passed away, the patient went into convulsions and partial unconsciousness, death being momen-

tarily expected. Days passed and ran into weeks, and there was no change, and at the end of a month the patient was still alive, and appeared to have an excellent prospect of recovery. How it is that the patient lived is a mystery, and it is suggested that the removal of the spleen, the use of which is unknown (?), was perhaps the proper thing to do. The functions of the kidneys are now said to be performed by the skin, the respiration is reported to be "almost double" the normal amount, and the "water fairly drips from the skin." A number of other curious details are given, such as the growth of hair on a previously bald head.

The Hospital Collections up to the 16th inst. had reached the sum of $38,000.

The Child's Nursery and Hospital realized this year about $19,000 from the Charity Ball.

Dr. Walter Wyman is in charge of the U. S. Marine Hospital Service during the sixty days leave granted to Dr. Hamilton.

Dr. Joseph L. Bodine, of Trenton, N. J., died on January 2d, in the forty-ninth year of his age.

Spectacle Missions.—Dr. Edward J. Waring has conceived the idea of establishing "Spectacle Missions," or societies for the gratuitous distribution of spectacles among the poor. We are told that $45 will cover the cost of 240 pairs of spectacles and 240 New Testaments. This estimate shows the modest margin of profit which ordinarily enures to our esteemed allies, the opticians.

The Death of Dr. William J. Welch, of this city, occurred on January 14th. Dr. Welch was born in 1847, and graduated from the University Medical College in 1866.

The Marine Hospital Service.—The bill reorganizing the Marine Hospital Service has become a law. The essential feature of this new law is that appointments to the service are made by the President and confirmed by the Senate. The service is now, therefore, upon the same non-political footing as that of the Army and Navy. Changes in politics can no longer endanger the position or prospects of advancement of its members. In accordance with the law, the President has sent to the Senate a list of names of all the present members of the service for appointment as Surgeons, Assistant Surgeons, and Passed Assistant Surgeons, respectively. Dr. Hamilton has crowned his labors for the promotion of the service in a way which must be most gratifying as it is creditable to him.

There are Rumors that Philadelphia is to have a new medical college, eclectic in character, which is to be called "The Burton Medical College." We trust that our neighbor city will be spared the infliction. The eclectic colleges, so-called, of this city have been pests of a most incurable kind.

A Charge Against Family Physicians.—It is one of the notable facts in the history of medicine, that the charge of immorality has never been more than incidentally and sporadically made against physicians. In the satirical, dramatic, and other literature, in which the foibles and weaknesses of medical men are set forth, immorality is not classed among their vices. The priesthood has won an unenviable conspicuousness in this respect. A clergyman of Brunswick, N. J., however, during the course of a sermon preached recently, read a letter from a brother minister of this city, in which he stated that many fallen women who had been reclaimed by the Florence Mission attributed their ruin to their family physician. The publication of bald statements of such a character is likely to do gross injustice to medical men. There are doubtless some black sheep among us; but, taken as a whole, there is no class of men so scrupulous in their conduct toward the women with whom they are brought into relations. To such conduct they are bound, not only by the solemn oath of graduation, and by their sense of personal and professional honor, but also by the absolute need which a family physician has of keeping his name unsmirched.

It is reported that the Royal College of Surgeons has voted almost unanimously to censure Sir Morell Mackenzie for the publication of his account of the case of the Emperor Frederick. The resolution, it is said, was passed despite the fact that the Empress Victoria used her personal influence to prevent the vote.

Honor to Professor Leidy.—The Cuvier Prize of the French Academy of Sciences, which is awarded triennially for the most important researches in the domain of general natural history and geology, and which has associated with it, among others, the names of Von Baer, Ehrenberg, Richard Owen, Agassiz, and Heer, has been this year decreed to Dr. Joseph Leidy, Professor of Anatomy in the University of Pennsylvania, and President of the Academy of Natural Sciences of Philadelphia.

Reception to Dr. William Goodell, of Philadelphia.—One of the events of the season was the reception tendered by Dr. Paul F. Mundé to Dr. William Goodell, of Philadelphia. A large number of medical gentlemen from this and other cities were present to do honor to the distinguished guest.

Man's Worst Enemy.—"The bacillus of tubercle is," say MM. Filleau and Léon Petit, "of all micro-organisms, one of the most refractory to the action of the most destructive agencies. It maintains its virulence after lying for forty days in putrid sputum, and for one hundred and eighty-six days away from contact with air. It can live at temperatures between 86° and 104° F. The most unfavorable conditions, though affecting its activity, do not compromise its existence, for it resumes its virulence whenever its surroundings become suitable. To render it inactive, it is necessary to have recourse to violent means, such as ebullition, steaming, or prolonged contact with antiseptic substances, such as ammonia, concentrated salicylic acid, absolute alcohol, or a strong solution of carbolic acid. Corrosive sublimate itself is powerless to disinfect the sputum (Schill and Fischer). The bacillus acclimatizes itself amid the most unfavorable surroundings. It complies with the exigencies of its condition, and even alters its shape, but without losing any of its virulence, of which it gives ample evidence whenever fortune favors it. Its polymorphism is not the least curious point in the life-history of this organism. Thus it is sometimes a short rod, sometimes a line—occasionally it splits, and forms spores—but it always returns to the bacillus in its complete form, with its virulence intact, whenever circumstances become favorable. 'It knows how to suffer, but it never loses sight of its claims.'"

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, December 7, 1888.

A. BRAYTON BALL, M.D., IN THE CHAIR.

DR. BEVERLEY ROBINSON presented a patient with

HYDRO-PNEUMO-THORAX.

T. McQ——, twenty-four years of age, an Englishman, had enjoyed fair health up to the beginning of his present trouble. One evening while intoxicated he quarrelled with some companions, and was choked and pushed with some violence against a wall. The following morning he complained of pain in the left chest. Nine weeks later he entered St. Luke's Hospital, and was there found to be suffering from hydro-pneumo-thorax. The left chest contained air and fluid, and the heart was pushed over to the right, the apex-beat being near the mammary line on this side. Thoracentesis was performed and twenty ounces of fluid, but no air, withdrawn. The operation was repeated later, when, after the withdrawal of about one ounce of fluid, a large amount of air escaped. The fluid then appeared again in the aspirator, but after about three ounces had been removed the signs of weak heart became so alarming that it was necessary to suspend the operation. The chest was now full of fluid but contained no air; the succussion-sound which was before heard could not now be elicited, and percussion gave no evidence of anything but fluid. The heart was still on the right side, and had not moved any toward the left at the time of the first operation. It was possible that it was a case of congenital dextrocardia, though the other viscera were not transposed.

The first point of interest in the case was concerning the origin of the hydro-pneumo-thorax. Three hypotheses had been suggested: 1. That there had been a fracture of a rib, tearing the pleura and penetrating the lung. Against this theory, however, was the fact that the physician in attendance at the beginning of the trouble found no fracture, and also that there were now no evidences of such an accident having occurred. 2. That perforation of the pleura had occurred as a result of tubercular disease of the lung. But the previous history of the patient did not point to any pulmonary trouble prior to the receipt of the injury. 3. That rupture had occurred as a direct result of the traumatism caused by choking and simultaneous compression of the chest when the man was squeezed against the wall. This, the speaker thought, was the most probable theory.

Another point was as to the cause of the alarming heart-symptoms at the time of the second thoracentesis, compelling the operator to desist from the attempt to withdraw any more fluid. It was improbable that fright was the cause, for the man was a plucky fellow and had not seemed to be at all alarmed either at this operation or at the preceding one. Dr. Robinson's theory was that the opening into the lung had closed before the second operation, and that the withdrawal of such a large amount of gas had caused a vacuum which the compressed lung could not fill. The pericardium, assuming that the heart was displaced by the air and fluid in the left chest, had contracted adhesions in its new situation, and the dragging upon it produced by the partial vacuum in the now closed pleural cavity had caused serious disturbance of the heart's action. If this were the case, it became a very serious problem what to do for the patient's relief. His condition was now a precarious one, and he was in danger of sudden death from heart failure, yet any further attempts to withdraw the fluid and thus bring back the heart to its normal situation seemed likely to be attended with very grave risks. The speaker intended, however, to make the attempt, stimulating the patient freely and proceeding very cautiously and deliberately in the withdrawal of the fluid. It was a curious fact that, whereas formerly the patient had suffered much from dyspnœa, he now had no unusual shortness of breath, and could even ascend the stairs without difficulty.

The third point in connection with the case which was of interest was that the fluid was still serous; for it is extremely rare to find fluid which has remained in the chest, in a case of pneumo-thorax, for several weeks without becoming purulent. Finally, it is supposed by some authorities that an effusion of fluid into the pleural cavity causes great pressure on the lung, but at the first operation there was no escape whatever of air, thus showing that there was no great degree of pressure.

DR. G. L. PEABODY said that he was at a loss to explain the origin of the disease. He had recently had two patients with pneumo-thorax resulting from the rupture of an emphysematous lung. A very puzzling feature in this case was that there should be such a free entrance of air into the pleural cavity without suppuration of the contained fluid.

DR. ROBERT F. WEIR said that he had seen two cases of rupture of the lung from violence—hæmo-thorax. The patients died, but at the autopsy no pus was found in the pleural cavity. The air in the deeper portions, that is, near the surface of the lungs, is so pure that the danger of suppuration in a fluid exposed to it is very slight. When perforation of the pleura occurs from disease the case is different, but in a traumatic rupture of a previously healthy lung he would not expect to find the fluid purulent.

DR. A. B. BALL thought that the explanation of the alarming heart-symptoms by the production of a vacuum in the left chest cavity was the correct one. The opening might have been a very small one, and have thus closed spontaneously. Even a small opening will allow a pretty free escape of air.

DR. ROBINSON said that he intended to try again to remove the fluid, for that was the only way to get the heart back again in its proper position, yet he feared a recurrence of the alarming symptoms which had forced him to stop at the last operation. He had thought of introducing sterilized air, but there were many difficulties in the way of carrying out this procedure.

DR. JAMES B. HUNTER then read the paper of the evening (see p. 57), entitled

THE MENOPAUSE.

DR. ANDREW H. SMITH said that he had not noticed in the enumeration of causes which may hasten the occurrence of the menopause any reference to psychic disturbance. This is sometimes a very potent factor. He recalled the case of a lady, thirty-six years of age, who was greatly alarmed one night by a fire. She recovered from her fright, but never menstruated again. Referring to the instances in which the menopause is delayed in consequence of pathological conditions, and when hemorrhage occurs regularly from this cause, he inquired whether Dr. Hunter believed that ovulation took place also in such cases.

DR. HUNTER replied that he could not say whether ovulation occurred in such cases or not. There were several cases on record of pregnancy in advanced age, and Tilt had reported a case occurring in a woman ninety-two years of age. If there was a regular appearance in the flow he should be inclined to regard it as true menstruation, even if it did occur at an age beyond that at which the menopause usually took place, and in such a case pregnancy was possible.

DR. CLEMENT CLEVELAND reported a case of

PYO-NEPHROSIS,

occurring in a woman, twenty-nine years of age, who had been sent to the Cancer Hospital as a case of malignant disease. The tumor was on the left side, and was distinctly fluctuating, and the diagnosis lay between an ovarian tu-

mor and abscess of the kidney. The day before the operation, however, the woman passed a large amount of greenish pus in the urine, and the operation itself showed that the affection was an abscess of the kidney. A trocar was introduced through the abdominal opening, and more of the greenish pus, such as was passed in the urine, was withdrawn. At the bottom of the wound, and a little to the left of the centre, was seen a large mass which the operator took to be a portion of the enlarged kidney. This, he supposed, would eventually atrophy and disappear.

Dr. R. F. Weir said that the case was interesting from a surgical point of view. It was usually thought improper to open the kidney from the abdominal cavity. Sometimes in those cases of pyo-nephrosis the cause of the trouble was discovered to be a stone, and in such a case it would be found difficult to remove it through the sinus.

Dr. William T. Bull exhibited a small, portable storage battery for furnishing an electric light. The battery could be charged with a dynamo, and when so charged would run for five hours.

The Society then adjourned.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNECOLOGY.

Stated Meeting, December 27, 1888.

J. E. Janvrin, M.D., Chairman.

EXHIBITION OF A PERINEAL RETRACTOR FOR THE DORSAL POSITION, WITH AN ELEVATOR FOR THE ANTERIOR VAGINAL WALL.

Dr. A. H. Goelet presented the instruments, which were especially adapted to use in the application of electricity to the uterus and vagina. The retractor was a speculum of the general shape of S, cast thin, and coated with hard rubber for insulation. It was to be held in the left hand of the operator, the patient in the dorsal posture, and the elevator of the anterior vaginal wall held in the left hand by the nurse as she stood to the right of the patient. The elevator being made of hard rubber, yielded sufficiently to obviate pain to the patient. By the use of these instruments space was allowed at the vulva for the introduction of an electrode of considerable size. Two hundred milliampères had been employed with safety. While intended for the dorsal position, they could be employed with the patient in the Sims position. Their advantage was due to ordinary methods not permitting sufficient expansion of the vulva for the use of suitable electrodes, or those carrying a strong current. He also exhibited the electrodes which he was accustomed to use.

Dr. E. H. Grandin thought the instruments were the result of ingenuity, but personally he had never found it essential to use a speculum of any kind in order to apply electricity within the vagina or uterus. Indeed, he thought such instruments tended to complicate a method of treatment which was one of the most valuable at the physician's disposal in certain pelvic affections. He did not require a nurse to elevate the anterior vaginal wall, nor did he engage his left hand in depressing the perineum. It was all-important that the general practitioner, who ought to employ this remedy if it was to be of wide value, should not find the methods of application complicated.

Dr. Charles Jewett used the Sims speculum in Sims position while galvanizing the uterus. The patient held the cotton pad or Apostoli electrode. The advantage of this position was that it enabled him to thoroughly disinfect the parts, which he considered necessary for successful treatment. He had had no difficulty in introducing the ball-electrode into the vagina.

Dr. H. T. Hanks thought the instruments exhibited would prove useful in general examinations for diagnostic purposes, when the physician had a large dispensary service, time limited, and the patient had, as she usually did, assumed the dorsal position. He had not found a speculum necessary when applying electricity.

Dr. Goelet asked Dr. Grandin how many milliampères he could use with the chamois-covered electrode without cauterizing the vagina, if no speculum were employed. He sprayed the vagina thoroughly, and wiped it out several times with absorbent cotton, which further necessitated a speculum.

Dr. Grandin remarked that he had employed electricity probably as much as any physician in the city the past three years, but had never, in using it as described, cauterized the vagina. The strength of the current was from 40 to 75 milliampères; 150 to 200 was altogether higher than necessary. He did not think it necessary to spray or wipe out the vagina before introducing the electrode, unless there were excessive leucorrhœa. Septic endometritis or salpingitis had never resulted for want of asepticism in his cases.

Dr. J. P. Tuttle then read the history of a

CASE OF EXTRA-UTERINE PREGNANCY, IN WHICH THE FŒTUS WAS DELIVERED INTACT PER RECTUM.

The mother, aged thirty-five, married eleven years, with tubercular family history, had never been pregnant prior to this illness. She had been troubled for years with possible falling of the womb, and had been treated by regular and irregular physicians.

When Dr. Tuttle saw the patient in March, he learned that her menstrual periods in January and February had been shorter than usual. Digital examination revealed the womb well down, retroverted, somewhat enlarged, but the use of the sound for positive diagnosis was refrained from on account of possibility of pregnancy. Two days later pain, referred to the rectum, was relieved by cold applications, but the patient refused to take an anæsthetic and submit to a thorough examination. Extra-uterine pregnancy was thought possible. The idea of pregnancy, however, was little entertained by the patient, who passed into the hands of an electro-therapeutist. Dr. Tuttle saw her again in April, and learned that during one of the electric séances, at which the electrode was introduced into the uterus, she had a severe hemorrhage, lasting two hours, and was shown a black mass which the doctor said he had removed from the womb, and which had been the cause of all her trouble. She passed blood for more than six days afterward, and Dr. Tuttle was of the opinion abortion had been produced. Examination of the patient two days later, or April 25th, revealed continued vaginal heat and tenderness about the peri-uterine tissues; the depth of the uterus was five inches, it was slightly movable, in fair position, but there was a large mass between the womb and rectum, closely attached to the womb, and movable with it. It felt like a fibroid or possible hæmatoma. Under general treatment for some weeks the patient got up, was able to remove to another part of the city, and attend to household duties, although contrary to instructions. June 1st it was stated she had continued to have slight flow of blood for eight weeks. The lining membrane of the uterus was smooth. The tumor seemed not to have grown larger, but had sunk lower down, giving rise to certain painful symptoms. Persulphate of iron in solution was thrown into the uterus to stop hemorrhage, which had ceased by June 13th. On June 25th it was noted the tumor had sunken much lower and felt softer; there was pain in the rectum and difficulty at stool. He was called the next day, and on his arrival found another doctor had got there first, and was removing a four months' fœtus from the rectum. The patient had, the night before, taken a cathartic, and during its action was seized with severe pain, and expelled the fœtus through a clean rent in the rectum about three inches in length. The cord was attached to both child and placenta. The latter was firmly adherent, and slight traction on the cord bringing on arterial hemorrhage. It was allowed to remain and a tampon was introduced.

The patient survived partial collapse. About two days later he attempted again to remove the placenta, and found it very tightly wedged in the rectal wound. Slight traction upon it brought on hemorrhage, and so severe shock that death seemed imminent. There was no evidence of peritonitis. About the fourth day after the expulsion of the fœtus he was called, and found the patient rapidly sinking, apparently from internal hemorrhage. An autopsy was denied.

It seemed probable that the placenta was attached to the left tube or ovary. He inferred that, had it not been for the severe straining after taking a cathartic, the case would have pursued the usual course after death of the fœtus, viz., decomposition, abscess formation, constitutional symptoms, rupture, and discharge through the rectum or vagina. He was unable to state the strength of current used, but according to the patient's statements it was a strong one.

Before the discussion on this paper Dr. Robert A. Murray presented specimens and gave the history of a case of

HÆMATOMA OF BOTH OVARIES

in a patient operated upon on December 2d. She was married at the age of twenty-four, and nine months afterward had a normal delivery. Sixteen months later she had another normal delivery. She ceased nursing the last child at the tenth month, two months before Dr. Murray saw her. The second child had been delivered in February, and in April she felt signs of pregnancy, and five months later thought she felt movements, but her physician said she was not pregnant. In November she menstruated, and this month she consulted Dr. Murray, to learn whether she was pregnant, or what was wrong with the womb. On the right side he found a tumor the size of an orange, continuous with the Fallopian tube, which seemed enlarged. The tube was fixed and immovable. He could determine nothing on the left side except an indistinct hardness. There was a question regarding extra-uterine pregnancy. Dr. Gillette and Dr. Janvrin were consulted, both of whom were convinced of the presence of salpingitis, and of possible extra-uterine pregnancy. At the operation they found an extreme amount of firm adhesions, which rendered the operation most difficult and prolonged it three hours. The ureter on either side was displaced and passed through the mass of exudation, and had to be exposed a distance of eight to ten inches. The bleeding was profuse. No evidence of extra-uterine pregnancy was found. The tumor on either side was a hæmatoma with pyosalpinx.

Dr. H. C. Coe had been interested in the case of Dr. Tuttle, which resembled in some parts of its history one which he had related at the Obstetrical Society. The fœtus in his case had been encysted in the abdomen an unknown period, and the bones were finally discharged through the vagina. They were the remains of a fœtus of about the fourth or fifth month. The woman had been married nineteen years, and had not missed a period. Before rupture of the sac Dr. Hunter saw the patient in consultation, at which time it seemed a clear case of impacted fibroid uterus. Hemorrhage was such that they had despaired of the patient's life several times. When the sac ruptured, which took place during an attack of peritonitis, and the woman's health permitted, they thoroughly cleansed the cavity, and complete recovery ensued.

The difficulty of diagnosis of extra-uterine pregnancy was daily being made more and more apparent. The case of Dr. Murray was an illustration. He had also seen a case of pyosalpinx with similar displacement of the ureter. There was with it pyonephrosis, and he would suspect renal trouble in Dr. Murray's case.

Dr. Jewett recognized the difficulty of diagnosis in Dr. Tuttle's case, but when it was once made he thought the question of the propriety of laparotomy was immediately raised.

Dr. H. T. Hanks remarked that we now saw many more cases of extra-uterine pregnancy than were formerly recognized. A doctor, whose wife he had recently attended for presumable extra-uterine pregnancy, told him that his father, who had a large practice in a country town, had within the past ten years attended three autopsies in which there was ruptured tubal pregnancy. He believed that many cases of sudden collapse in married women, the first or second month after missing a period, were cases of extra-uterine pregnancy. We should do all in our power to make an early diagnosis. Of the cases lately reported in an English journal, 31 were not treated, and 18 of these died. Nine of the 18 fatal cases died before the end of the third month. As soon as the diagnosis had been made the physician ought to resort at once to the best treatment at his command, and not wait for his patient to visit Chicago or New York, for delay meant danger. If the fœtus had not passed the third month there was unquestionable authority in favor of electricity. In such cases as that of Dr. Murray, it was only the most skilled surgeon who could perform the operation and have the patient recover. Kill the fœtus with electricity, and subsequently, if the symptoms called for it, remove the remains; the operation would then prove less difficult than was the primary one.

Dr. A. F. Currier thought one of the most important questions had been raised by Dr. Hanks, that of electricity *versus* laparotomy. It was evident that electricity could not be regarded as perfectly safe and sure in all cases. Again, the diagnosis of extra-uterine pregnancy might erroneously be made, the current passed, and the fact then be learned that the case was one of pyosalpinx. We might say we had done no harm, but were we sure of it? At any rate, the pyosalpinx remained and no advance had been made. It was claimed by the advocates of electricity that it should be used before the fourth month, but it was also during just that time that laparotomy offered its greatest advantages.

A case then under his observation gave a history much like that of Dr. Tuttle, although the tumor was known not to be adherent to the rectum. At first there was absence of marked colicky pains; hemorrhage had continued several weeks; pieces of membrane had been passed; the breasts gave signs of pregnancy. A month ago, Dr. Janvrin saw the patient with him, and they were in doubt about extra-uterine pregnancy. To-day both thought extra-uterine pregnancy existed, and they proposed soon to operate. Under such circumstances of doubt he thought it was cruel to resort to other treatment when laparotomy would dissipate the clouds. He believed the day was not far distant when the use of electricity in extra-uterine pregnancy would be laid aside. When the diagnosis had been made there should be no more hesitancy in doing laparotomy than in a case of pyosalpinx.

Dr. A. P. Dudley would have opened the abdomen at once in Dr. Tuttle's case, after learning that he could not remove the after-birth through the rectum. Regarding diagnosis of extra-uterine pregnancy, there were still many things to throw doubt upon it in a given case. Symptoms which resembled it in many cases arose from intestinal adhesions. He had repeatedly found nausea and vomiting, and other reflex symptoms resembling pregnancy, due to pelvic adhesions, and relieved when these were broken up during laparotomy. The pelvic organs dragging upon the adhesions, and through them upon the intestines, had caused the symptoms.

The Chairman thought, with reference to the propriety of laparotomy in Dr. Tuttle's case, that if the diagnosis had been made fairly well it would certainly have been advisable to perform laparotomy early, and all agreed that the results of such an operation in the early months should be successful. The case certainly could not be put down as one of successful treatment by electricity.

In Dr. Murray's case, they were pretty firmly convinced before the operation that the condition was one of

pyosalpinx or of hæmatoma, and not of extra-uterine pregnancy. With due deference for Mr. Tait's opinion, he felt convinced, from the reports of his own cases, that in the large majority of them in which he had removed only a small clot, the condition was not one of ruptured tubal pregnancy, but of hæmatocele or hæmatoma. Contrary to the view of Dr. Hanks, he held that the removal of a tubal pregnancy before the third or fourth month was a very simple operation, and statistics were accumulating in proof that the tumor could be much more readily removed before the use of electricity than after. He strongly favored laparotomy *versus* electricity.

Dr. Tuttle closed the discussion, and called attention to the marked collapse of his patient, on slight disturbance of the after birth, as precluding for the time laparotomy or other operation.

Dr. H. C. Coe then read a brief paper (see page 63), entitled

THE IMMEDIATE APPLICATION OF FORCEPS TO THE AFTER-COMING HEAD IN CASES OF VERSION WITH PARTIAL DILATATION OF THE CERVIX.

Dr. W. R. Gillette said that he had always found, when the cervix dilated sufficiently to allow the shoulders to pass, that there was also room enough for the passage of the head when pressure was made upon this from above and without; consequently he had never had occasion to apply the forceps to the after-coming head. He was unable to recall his statistics of mortality to the child.

Dr. Cooper had frequently met with the class of cases described by Dr. Coe, in which there was great danger to the child from only partial dilatation of the cervix after version. The difficulty at the cervix would be overcome after a time, say ten to twenty minutes, so that the head could pass, but very often it was five or six minutes too late. A certain amount of time, however, could safely be allowed after version for dilatation and passage of the head, and he believed the child was often sacrificed because of undue haste in extraction.

Dr. Malcolm McLean would, if necessary, stand alone the champion of the old method of bringing the chin down in the line of the superior strait, and allowing the further expulsion of the head to be brought about by pressure from above. He did not believe there should be any traction on the body whatever. He had always followed this practice, and had not seen a case, until lately, in which it seemed desirable to apply forceps to the after-coming head. He could give the statistics of his last thirty-two cases in which the head was delivered last, and in none had he lost the child. He believed death to the child was commonly due to traction upon the body and injury to the cord or internal organs, and not to pressure on the funis.

Dr. Cooper expressed disagreement from the last remark of Dr. McLean. He never knew death to result from injury. When it took place, suffocation was the cause.

Dr. R. A. Murray thought there were some cases in which the use of the forceps to the after-coming head was called for, although few; in ordinary presentations, the forceps were sometimes applied because they acted auxiliary to dilatation, which might be slow, and he thought they might have a similar effect in the cases under consideration. In some cases of fleshy women, aid from pressure on the head from above could not be obtained, and there especially the forceps might be useful.

Dr. Jewett had long been an advocate of the forceps applied to the after-coming head in cases of only partially dilated cervix, and in which the child's shoulders were narrow compared with the head. He had not found their application difficult, although the next speaker, Dr. Coudert, had had a different experience.

Dr. Coe closed the discussion, calling attention to the fact that the paper referred to only a small class of cases in which it was necessary to make use of the forceps; while in the majority, urgent measures were not called for, and the child could be saved by expression, and by manipulation through the vagina.

SECTION IN SURGERY.

Stated Meeting, December 10, 1888.

R. F. Weir, M.D., Chairman.

Dr. W. T. Bull presented (see page 62)

A CASE OF PRIMARY TUBERCULOSIS OF THE TONGUE.

FISTULA IN ANO; RESTORATION OF THE SPHINCTER.

Dr. L. Bolton Bangs presented a man upon whom, some eighteen months ago, a surgeon had performed the usual operation for fistula in ano, and divided the sphincter. The result did not prove successful, and, after having passed from one institution to another until he had made nearly the full round of all in the city, he fell into the hands of Dr. Bangs. There was absolute incontinence of fæces and gases, and he had been obliged to give up all work. A funnel-shaped cavity occupied the place of the normal anus, large enough to receive three fingers. He had been told that nothing could be done for him, but Dr. Bangs concluded to try a simple operation, consisting in dissecting out the broad leathery cicatrix of triangular shape until cellular tissue and the mucous membrane of the rectum had been reached. The sphincter had retracted to the opposite or left side. In order to hold the edges of the wound firmly together, and prevent retraction, it was necessary to pass three silver-wire sutures, after which six deep silk sutures were introduced. The edges of the mucous membrane and also of the skin were then stitched with catgut. The patient now had complete control of fæces and gas.

The Chairman remarked that such cases float occasionally into the hands of surgeons of all hospitals, and he had seen his share. Several times he had attempted to close the cavity and restore the anus, but he had to confess to failure except in one instance, in which he made a free dissection, taking out quite a bridge of tissue. He thought his error, and probably that of others, had usually been due to overlooking the fact that the circular muscle of the anus when divided made very extensive retraction.

Dr. Charles A. Powers presented a case of

PRIMARY UNION OF COMPOUND FRACTURE OF OS CALCIS.

Dr. Robert Abbe, who completed the treatment of Dr. Powers' case by making a flap to heal the wound, said the patient came to him about three months ago, having upon the deficient heel of the right foot a large, thin cicatrix adherent to the bone and attempting to repair its centre by very poor granulations. This had been going on many months without any progress, and it was evident the cicatrizing process had about ceased. The ulcer was nearly two inches by an inch and a half. He believed that in times past such a foot would have been amputated because of its uselessness with the heel in that condition. The preparatory treatment consisted in keeping the sore in a stimulated condition, and in placing the left knee in plaster of Paris, bent at a right angle, for a week before the operation, to accustom it to the position. Then a large flap was dissected up from the calf of the unaffected limb, the base directed upward, and larger than the surface to be covered in order to allow for shrinkage. Then the heel was prepared by cutting out the cicatrix and ulcer until healthy tissue was reached. The flap, after it was stitched into the large opening, had its base directed downward, with the leg crossing the affected member in the form of a figure 4, in which position it was maintained two weeks by plaster of Paris. The patient felt no inconvenience during the union of the flap, which proved to be primary throughout, and only required at the final dressing separation at its base under cocaine anæsthesia.

Dr. W. T. Bull, being asked his experience with large

flap-transplantations, first remarked that in the case just recited the results justified the highest commendation, and he would add that the primary union of bone in an open and severely contused heel was a most satisfactory tribute to the care and aseptic management of the case by the surgeon in charge. He had had occasion to see the patient several times while in the care of Dr. Powers, and, never having seen the os calcis unite in a compound fracture, he did not expect it in this case; yet in so large a wound no pus formed during the three weeks it was healing. He had had no experience with transplantation of skin-flaps to the heel, but considerable in relation to the forearm, hand, and fingers. He believed the treatment should be resorted to more frequently than it had been and as soon as the surgeon had become convinced that the wound would not heal. Two conditions were necessary for success: (1) The operation should be undertaken before the patient was reduced in general health or had lost local vitality; (2) arrangement must be made to secure absolute immobility during union. Then one was often tempted to make the flap too small at the base, through fear of leaving too great an open space behind. This wound, however, could be healed by ordinary dressings.

THE CHAIRMAN thought the course adopted in this case, of accustoming the limb to its strained position before the operation, was a good one, especially in operations on the lower extremity.

DR. SYMS mentioned a case showing what sad results might possibly have been prevented by flap-transplantation as in Dr. Powers' case. When he was interne in Bellevue Hospital a tenotomy was performed on a man for talipes equinus. A very persistent ulcer developed which kept the patient abed for months, and he finally passed into acute dementia, was sent to the asylum, and a year or two afterward was brought back to the hospital and his foot was amputated.

DR. ABBE said, regarding the patient being able to bear a strained position, that a severe test occurred in the case of a woman who had a cicatrix involving the entire palm of the hand. He dissected it out and covered the wound by clean skin dissected up from near Scarpa's space, the hand being shoved under the skin, which was left attached at either end. The thigh had to be put up in plaster of Paris. The result was good, but it required morphine constantly for two weeks to enable the patient to bear the pain.

DR. ABBE presented a lad with an

EXTENSIVE NÆVUS,

reaching from the tip of the thumb, along the side of the forearm and arm, up over the shoulder, and terminating on the neck. It was also present in a slighter degree over the trapezius muscle. Two years ago, when treatment was begun, it formed cavernous masses of nævous tissue in the subcutaneous and cutaneous tissue along the arm and on the shoulder. It was, indeed, the most extensive case which the doctor had seen, and seemed to be beyond surgical control. By piecemeal, however, it had gradually yielded to treatment, and was perhaps two-thirds cured. It had extended somewhat since treatment was instituted.

The treatment had been by various methods. First he tried electrolysis, introducing into the tissue a number of fine needles, as is done for the destruction of abnormal growth of hair. This procedure did well on the hand, but it was not applicable to the arm where the cavernous masses were much larger, and here he used the actual cautery, puncture with the hot iron and the paquelin cautery. At the flexure of the elbow was a mass two-thirds the size of one's fist, which he excised. It had left a small ulcer, which had not yet healed. On the upper part of the arm he had employed still another method, which offered better results than any of the others. It consisted in transfixing the affected veins with a platinum wire, passed by attaching it to silk threaded on a needle. The platinum loop, which included the venous mass, was brought to the proper heat by the electric current to make section. The extensive mass on the shoulder, which had disappeared under this treatment, would probably have led to the patient's death, through hemorrhage, had excision been resorted to. At the last operations with the galvano-cautery Professor Esmarch was present, and said that in similar extensive conditions he had transfixed the mass with a thread which had been soaked in a solution of persulphate of iron and permitted to dry. When the needle was first passed there was hemorrhage, but it immediately ceased when the styptic came in contact with the tissues. No harm had come from the treatment, he said, while the mass usually shrank.

THE CHAIRMAN remarked that the speaker had in this case made use of various methods of treatment, all of which were eminently practical. For small nævi he thought there was nothing better than the electrolytic needle. That day he had seen a child again which had been treated by this method, with satisfactory results, for a large subcutaneous nævus involving the tissues about the eye and face. He confessed to considerable hesitation in the use of persulphate of iron, for he had seen severe cardiac and cerebral symptoms follow the injection of a few drops of the solution into a nævus on the face.

DR. W. T. BULL had never seen a nævus so extensive as in this case, but the result of the treatment here would be a great encouragement in similar conditions. He had had experience with excision in only one instance, that of a nævus covering the entire posterior surface of the elbow. He was astonished at the amount of hemorrhage which followed, placing the patient's life in jeopardy, from which he was rescued only by the timely venous infusion of a salt solution. He would not undertake excision again unless the venous enlargement were of small area. Puncture with thermo-cautery or galvanic loop would seem preferable, while for small nævi he would use needles and electrolysis.

DR. J. D. BRYANT said, regarding excision, that he once employed this method on a nævus involving nearly the entire lower lip. He made compression of the vessels at the angle of the mouth, as was done before operation for epithelioma of the lower lip, but after removing the nævous tissue there was profuse hemorrhage, which necessitated the use of the whip-stitch with catgut. Good union resulted.

DR. ABBE added that in his case the veins were not alone involved, but the cutaneous arteries as well, and most of the hemorrhage during the operation had been arterial.

DR. J. D. BRYANT then related the history of a case (see page 40) of

LAPAROTOMY AND NEPHRORRHAPHY.

THE CHAIRMAN referred to the importance, in anchoring the kidney, of passing the suture low down on the organ, and of including some of the fibrous capsule to prevent tearing out.

DR. MORRIS suggested that Dr. Bryant would have had less difficulty in reaching and maintaining the kidney in position had he rolled the patient over on the pillow, allowing the organ to gravitate to the wound.

Regarding

MECHANICAL TREATMENT

for movable kidney, the Chairman and Dr. Bryant had had little success.

DR. W. B. DE GARMO had found a fair percentage of cases of floating kidney relieved by mechanical means. He had had three cases, previously operated upon without success, which he had relieved by a form of truss with a strong spring carried around from the opposite side of the body. He thought, however, that any operation which was safe and offered a permanent cure should be preferred. The pad which he had employed was as large as one's hand, and was placed lower down than theoretically one might suppose was indicated.

Dr. Morris instructed his patients to apply the bandage and pad as by trial they found it gave most comfort.

DUPUYTREN'S FINGER-CONTRACTION.

Dr. Willy Myer presented a man, sixty years of age, a druggist by trade, with contraction of the palmar aponeuroses, causing flexure of the fingers on both hands. The man's history and occupation did not permit of a mechanical cause in explanation of the case. In truth, we did not yet know what was the cause of the trouble in patients not obliged to work with the chisel or similar object. The treatment which had been practised in this affection had varied, and consisted in dividing the tissues presumably involved. The speaker had done Kocher's operation in the present case. He put an Esmarch bandage on the limb, made a longitudinal incision, readily pared the skin from the thickened aponeurosis, and, while it was held back with retractors, removed the aponeurosis from the deeper parts, and was then immediately able to straighten the fingers. He then applied catgut sutures, a piece of rubber gauze, and bandaged antiseptically. The first two days the patient had a good deal of pain but no fever. The fingers, formerly bent to an angle of forty-five degrees, could now be straightened. The other hand would be operated upon later.

The Chairman said that three years ago, without knowledge of what Kocher had done, he had employed the same method in one case with a very good result.

Dr. Abbe was glad to see the general profession becoming cognizant of the fact that this small but very important deformity could be relieved by a simple operation. However, there were yet scattered throughout the country many cases which in their locality were believed to be incurable. He had come to regard one method as better than any other, viz., multiple cross-sections. It only required the use of cocaine. The hand, after dividing the bands, should not be placed in extension; the fingers should rest comfortably open. When extension was adopted the patient was likely to suffer neurosis. The injury from overextension was also dwelt upon by the Chairman.

Dr. Powers said that since Dr. Abbe read his paper on Dupuytren's contraction, a year ago, he had operated in four cases, in each of which the contraction was overcome and the pain which the patients had previously suffered was relieved. The cases treated without the dorsal splint had done better than those treated with it.

Dr. A. M. Phelps did not believe it possible to cure Dupuytren's contraction with splints; under such treatment it would become aggravated. In a mild case like the one exhibited by Dr. Myer he would employ subcutaneous puncture as done by Adams, but where the finger was drawn to more than a right angle he would do Kocher's operation. The hand should not be put in extension. By overextension he had ruined one case. He was fully prepared to indorse the neurotic origin of the disease. He did not believe it was due to the gouty diathesis. When the contracting band was relieved the neurotic condition disappeared.

A Simple Method of Forcible Feeding.—Dr. I. S. Ivanoff, of Kostroma, recommends the following method for forcible feeding, which he has successfully employed in the case of an insane lady who absolutely refused to take food, in consequence of her having some fixed idea on that point. Having seated and steadied the patient, he firmly closes her nostrils by pressure, which causes her to open the mouth for breathing; then he slightly bends the lady's head backward and pours some liquid food into her mouth, by means of an ordinary spoon; she appears to swallow without much struggle The method is said to be very simple, and by far less troublesome and more convenient than the ordinary introduction of a gastric sound through the nose.—*The St. Louis Medical and Surgical Journal.*

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE DEBATE AT THE PATHOLOGICAL SOCIETY ON THE MORBID ANATOMY AND PATHOLOGY OF CHRONIC ALCOHOLISM—THE DEBATE CONTINUED BY DRS. DICKINSON, BUZZARD, FINLAY, PITT, SAVAGE, AND SHARKEY—WHAT IS AQUA MENTHÆ?—AN ATTACK ON HOSPITAL EXTRAVAGANCE—AID TO THE PASTEUR INSTITUTE.

London, December 24, 1888.

The debate on the morbid anatomy and pathology of chronic alcoholism was resumed at the Pathological Society on Tuesday evening last. Dr. Dickinson showed a drawing of a liver with enormous increase of connective tissue, and he maintained that the overgrowth of fibrous tissue was the essential part of cirrhosis of the liver and of granular degeneration of the kidney. He had often seen what appeared to him to be irresistible evidence of this new-growth in the cirrhotic liver and granular kidney of childhood, where the new-growth was very profuse and highly nucleated. He had satisfied himself that new vessels were developed in this new tissue. Whatever might be the minute anatomy of cirrhosis of the liver, there could be no doubt as to the effect of alcohol in causing it. Dr. Dickinson then adverted to the evidence as to the special liability to hepatic disease of persons whose occupations brought them in special contact with drink. There was no such evidence with regard to kidney disease; the total of renal disease was not greater in the drink class than in the others. The effect of alcohol on the kidney had been overrated. The fact appeared to be that the liver was acted on chiefly by alcohol, the kidney by a variety of causes. As to tubercle, observations showed a greater frequency of it in every organ in persons trading in drink, as compared with others. No doubt could be entertained that drink promoted tubercle instead of preventing it. In conclusion, Dr. Dickinson asked whether, though alcohol undoubtedly caused many diseases, there were none, or no morbid conditions, which it tended to prevent. He observed that the facts indicated that endocarditis was less frequent in the drink traders than in others.

Dr. Buzzard said he would not discuss the clinical aspects of alcoholic neuritis, which were now generally recognized, except to draw attention to the fact that, alongside of the complete immunity of the functions of the bladder and rectum usually observed in these cases, there was in females an almost constant suppression of the catamenia during the many months of illness usually involved. He had not seen any reference to this circumstance. Agreeing with Dr. Payne, that the acceleration of the heart's action was probably due to lesion of the vagus, he suggested the pneumonia which occasionally terminated cases of this kind might be due to a similar cause.

Dr. Payne had referred to the two kinds of microscopical changes found in the peripheral nerves, and had remarked that, though very generally the changes were found together, sometimes the signs of parenchymatous degeneration, at others those of interstitial inflammation, predominated. Dr. Payne had gone on to say that he believed both to be produced by the direct action of alcohol.

Dr. Buzzard said he could not acquiesce in this view. He had long felt that, notwithstanding the absence of observable lesion, there was probably some change in the cord which brought about the coincident and limited affection of so many nerves, and he referred to the suggestion he had made in his Harveian Lectures, in 1885, viz., that it was upon vaso-motor centres in the bulb and cord that the toxic action of alcohol was primarily excited.

Dr. Finlay said the appearances presented by the mi-

croscopical specimens which he was showing bore out in detail much of what had been said by Dr. Payne, as to the changes found in certain parts of the nervous system in alcoholic paralysis. Sections of the cord were shown, and they were healthy, though he did not deny that degenerations might occur. The morbid changes found in the nerves were as advanced in cases in which the cord appeared to be perfectly healthy as in cases in which changes in the cord had been observed. One of the most interesting points in connection with alcoholic paralysis was its association with tubercular disease. He thought there was a causal connection, and believed that excess in alcoholic indulgence led to both. It was quite true that persons suffering from phthisis, or having a tendency to it, might be benefited by a certain amount of alcohol, but this was a very different thing from the bacchanalian bouts of drinking indulged in by the patients whose organs were now being discussed.

Dr. Pitt brought forward some statistics based on the post-mortem records of Guy's Hospital, extending over the last twenty years. An interesting point to which Dr. Pitt drew attention was, that in as many as 22.5 per cent. of those dying with cirrhosis of the liver acute tuberculosis had been found post mortem, and the younger the patient the more liable he appeared to be to tubercle as well. With reference to diseases of other organs than the liver and kidney, which seemed to have some relation to alcohol, there had been three cases of acute cerebral meningitis, one of suppurating meningitis, and one of pachymeningitis.

Dr. Savage discussed the relation of alcohol to nervous and mental diseases, and gave some of the results of his extensive experience as resident physician to Bethlehem Hospital for the Insane. During the last seventeen years, he said, out of 4,000 patients admitted into Bethlehem only 133 had drink given as the cause of their insanity. This was a very small proportion, and was not to be considered as representing the proportion of insanity produced by excess of stimulants; but in Bethlehem, where the patients were specially selected, many drunkards were excluded. Of these, 133, less than one-fifth, had any insane relations, so that the persons so affected did not come from the nervously unstable. Thus, drink produced insanity in many who were otherwise fairly stable. On the other hand, drink could be shown to be the starting-point of neuroses, both in the individual and in the family. Only a very small proportion of those becoming insane as the result of alcohol were suffering from general paralysis. Many authors considered alcoholic excess to be the chief cause of general paralysis; Dr. Mickle believed it to be the great exciting cause. Dr. Savage said that he would say that, though alcoholic excess was common in general paralysis, and might be in some cases the predisposing, in others and larger numbers the exciting, cause of the mental symptoms first noticed in general paralysis, yet he had not found more than seven per cent. of the cases to depend on alcohol alone as a cause.

Dr. Sharkey discussed the action of alcohol upon the liver, and showed two microscopic sections in illustration of the view he put forward, viz., that the poison acted first on the portal vein and the connective tissue surrounding it, and that the liver-cells in its immediate neighborhood might remain healthy for a long time. In other organs, the spinal cord for instance, he had seen the vascular and parenchymatous changes side by side. It was probable that individuals might differ in this respect. Observers differed as to the effects of alcohol on the kidney; his experience in the post-mortem room had left him strongly imbued with the opinion that it was a potent factor in the production of chronic renal disease, though its injurious effects were far more frequently exemplified in cirrhosis of the liver. With regard to the nervous system, it seemed probable that the action of alcohol fell most intensely upon peripheral nerves and muscles, and much less upon the central nervous system. So widespread might be the effects of alcohol on nerves, that it was a question whether any nerve was beyond its reach; and Dr. Sharkey referred to a case he had published, in which, in addition to the nerves and muscles of the limbs, the phrenic and pneumogastric nerves, together with the muscles they supplied, were affected. But it was probable that even nerves of special sense might not escape. Some authorities supposed that certain cases of tobacco amblyopia, so called, were really cases of alcoholic amblyopia, though he was not aware that any indubitable case of this axial change of the optic nerve in alcoholism had been published. Dr. Sharkey then referred to a case which came under his care, of what he believed to be alcoholic retinitis. Referring to Dr. Mott's case of fatty degeneration of the heart and sudden death in a drunkard, he suggested that the cardiac degeneration might be the result of alcoholic neuritis, just as the muscles of the limbs degenerated as a consequence of disease of their nerves. Phthisis, he said, was frequent in cases of alcoholic poisoning, and, as Dr. Payne had said, was almost the rule in alcoholic paralysis.

What is Aqua Menthæ, or rather, what is the dispenser to understand by it? This is a question which has recently excited the pharmaceutical world, and the *Chemist and Druggist* has sent out a number of post-cards to members of the profession to elicit their opinion. Most of the replies state emphatically that the expression Aqua Menthæ is one which ought not to be employed, but the majority of prescribers seem to think that when it is used Aqua Menthæ Piperitæ is intended. Pharmacists, however, especially in certain districts, appeal to old formulæ, and assert that spearmint is intended; and it is reported that the examiners at the Pharmaceutical Society expect this answer from candidates. On the other hand, there are other districts, including the whole of Scotland, where spearmint is hardly ever prescribed at all.

Mr. Michelli, Secretary to the Seamen's Hospital, and late Secretary to St. Mary's Hospital, has recently read a paper before the Hospitals Association, which has caused great indignation in certain quarters. Mr. Michelli's paper was entitled "Hospital Extravagance and Expenditure," and he commented vigorously on the different ways in which money was wasted in hospital administration. Small and special hospitals were censured most severely for extravagance; their administration, he said, cost from fifty to seventy-five per cent. more per bed than that of the large hospitals.

A question was asked in Parliament last week, whether the Government would consider the propriety of affording pecuniary assistance to the Pasteur Institute, as English patients had been treated there free of charge. The Chancellor of the Exchequer said it would be necessary to inquire into the circumstances of these patients, as, if many of them were persons of means, it would clearly be for them to contribute to the funds of the Institute.

THE PHYSICAL PERFECTION OF MAN.

To the Editor of The Medical Record.

Sir: Dr. Mettler, in The Medical Record of December 8, 1888, paints his views on "The Nature of the Physical Perfection of Man" with optimistic colors, if not with scriptural precision. He admits the spiritual perfection of the first man, but denies him absolute physical perfection, accepting the statements of paleontology and materialistic evolution as antagonizing a belief in his dual perfection. Truly a theory nearly as old as the hills, if paleontological, if not in accord with more modern orthodox theology. The perfect spiritual nature is the condition requisite to the progressive development of the organism as a whole, and hence the spiritual is constantly exerting a perfecting influence upon the physical, in accord with its own perfect nature. The absolutely perfect man is thus a necessary result in the dim and distant future. Of course this hopeful, scientific (?)

view has an elaborate logical foundation upon which it rests. Let us examine it. There are two forms of perfection, the mathematical and the utilitarian. The first includes bilateral symmetry and symmetry of the homologous series, and this tendency is manifest in all animal life, and perfection is only delayed by the disturbing ele ments of man's environment, heredity included. The problem then stands: Only allow man to so understand these perturbating forces found in one's environment so that he may neutralize them, and the "anima," or spiritual nature of man, or creative force, the author using them indiscriminately, will then have unrestrained influence upon the physical form, producing an archetypal, ideal man, bilaterally and symmetrically developed in the minutest particular. And lo, and behold! the perfect man is evolved. Would that we might photograph him. Phidias, in his most exalted moments, never dreamed of such perfection of the human form. Note how his hair is disposed with wondrous symmetry on either side of a central part. His nose shows nothing of the ill-defined and warty character of its ancient prototype. Perchance that evil gastronomic appendage which in fœtal life violated the bilateral law and turned from the median way, will then, having more perfect knowledge, flop back into its ancient and honorable symmetrical position, and the whole train of sinful organs, consciously or unconsciously, who have followed this seat of indigestion and have caused no end of study and perplexity to the student of bygone ages to explain the intricacies of the homologous series, will, with becoming humility, under the inspiring influence of the "anima" march back to their pristine bilateral symmetrical locations. All hail that glorious day when the prodigals return and man shall be perfect. Then shall he be so evenly balanced that no temptation shall allure him, and heaven shall court his entrance. Search the "Arabian Nights" and can we find a more enchanting and delusive dream.

We do not deny the existence of bilateral symmetry, but that it is the chief element to be desired in the perfect man we do regard as visionary and without the scientific basis that our author claims. The tendency of modern scientific thought is to emphasize environment, and this bilateral method is largely influenced by uniform blood-supply, uniform exercise, identical surroundings and mode of development. Undoubtedly, too, it is obedient to vital laws, the nature of which have thus far been uninterpreted. But that this body of ours will attain a higher state of perfection in the future than it has in the past, we, too, hold is an untenable theory without sufficient foundation in facts. Has all vegetation, too, been swayed by this bilateral law, and are all the trees of to-day more symmetrical than those of five thousand years ago? Shall we in that later time have the same number of branches, leaves, and twigs balancing upon a central body? If so, I am glad I do not live in that period of perfect development, for to me the infinite variety of beauty in nature's storehouse is most desirable. Perhaps this spiritual perfection will at length close all inanimate nature within her grasp; then the mighty mountains' grandeur will depart as their ruggedness is planed off and the symmetrical cone and pyramid alone remain.

For me, I prefer to accept the old-fashioned scriptural statement, "So God created man in his own image." And as God is the embodiment of absolute perfection, the first man inherited a perfect physical body as well as spiritual nature, notwithstanding some so-called scientists read the teachings of paleontology otherwise.

This perfection remained so long as man harmonized with his environment. After his disobedience and fall this adjustment was only partial; friction and disease resulted, and only as man's knowledge of hygienic laws becomes more comprehensive, and his obedience to them becomes more implicit, can we hope for a better adjustment to his environment and the perfect physical man, now lost, regained.

As physicians, we congratulate ourselves that the average length of life is increasing, being due, as we believe, to the principles enunciated.

To be sure, man is essentially double, and for a very wise reason, if one organ is injured the other remains; but this double nature does not predicate absolute or potential perfection. We regard the utilitarian theory of perfection with most favor—his accurate adaptation for the purpose of his creation.

A. C. HAVEN, M.D.

LAKE FOREST, ILL.

THE RIGHT OF IT.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: The charge made by the *Cleveland Medical Gazette* against the medical profession of this city, to which you have given a wide currency by your comments in THE MEDICAL RECORD, is not borne out by the facts. There are a number of hardworking physicians in Cleveland who have contributed, and are contributing, original work in dermatology, gynecology, surgery, obstetrics, physiology, histology, school hygiene, etc.—work which such journals as THE MEDICAL RECORD, *The Boston Medical and Surgical Journal*, *The Journal of Cutaneous and Venereal Diseases*, and the like, have deemed worthy of publication, and which, moreover, has been given a still wider publicity by being copied in British and Continental journals.

It is, doubtless, a little rough on the editor of the *Cleveland Medical Gazette* that Cleveland physicians should seek the wider circle of readers afforded by the metropolitan journals when they have anything original to contribute to the literature of their respective specialties; but for him to retort that such work is not being done, and for a leading journal like THE MEDICAL RECORD to assume that the retort is a statement of fact, does a gross injustice to a group of workers to whose credit, rather than to whose blame, be it said, that they are but little given to wearying their professional brethren with prolix rehashes of other men's work. Very respectfully,

L. B. TUCKERMAN, M.D.

CLEVELAND, O., December 16, 1888.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 6, 1889, to January 12, 1889.

SHUFELDT, ROBERT W., Captain and Assistant Surgeon. By direction of the President, will report in person to Brigadier-General Wesley Merritt, President of the Army Retiring Board at Fort Leavenworth, Kan., for examination by the Board. Par. 1, S. O. 4, A. G. O., Washington, D. C., January 5, 1889.

JOHNSON, R. W., Captain and Assistant Surgeon. By direction of the Secretary of War, is relieved from duty at the United States Military Academy, West Point, N. Y., and will report to commanding officer at San Carlos, Ariz., for duty at that post. Par. 10, S. O. 7, A. G. O., Washington, D. C., January 9, 1889.

JOHNSON, RICHARD W., Captain and Assistant Surgeon. Leave of absence granted for fourteen days. Par. 1, S. O. 8, A. G. O., Washington, D. C., January 10, 1889

PILCHER, JAMES E., Captain and Assistant Surgeon. By direction of the Secretary of War, will repair from Fort Wood, N. Y. Harbor, to Philadelphia, Pa., at such time as his services can be spared, for the purpose of giving instruction to the Hospital Corps of the First Brigade National Guard of Pennsylvania. Par. 6, S. O. 8, A. G. O., Washington, D. C., January 10, 1889.

The Medical Record

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Original Articles.

ON SPASMODIC URETHRAL STRICTURE FROM ANAL FISSURE.[1]

BY L. BOLTON BANGS, M.D.,

SURGEON TO ST. LUKE'S AND CHARITY HOSPITALS, NEW YORK.

THE brief clinical record which I shall present to you this evening contains no novelty, and is entirely within the line of your experience, but it seems to me worthy of your consideration, not only because it may give an opportunity for discussing an interesting subject, but also for the purpose of giving me the advantage of your criticism upon the correctness of my observations.

It is probably within the memory of many of those present that some years ago an argument was made against a Fellow of this Academy who had then, and has since, written largely upon spasmodic stricture of the urethra, and who denominated such conditions by the title of "urethrismus;" and although there may yet be some surgeons who deny the existence of permanent spasmodic contracture of the muscles of the urethra, forming an obstacle to the exit of fluids and the introduction of instruments, still I think that a large number of observers have confirmed the statements of Dr. Otis. The case here recorded seems to me to be, without doubt, one of more or less permanent stricture of the urethra, due to reflex action of the spinal cord from an irritation at the anus.

The subject of this report was aged forty-one, a painter by trade. Twenty years ago he had syphilis, followed by secondary symptoms, but for many years he has had no evidence of it whatever. For several years he has been subject to attacks of painter's colic, and at such times the associated constipation has been very obstinate. About six years (he thinks) ago he began to have indescribable sensations in the region of his bladder, and pain during urination, but he had never had any urethritis or disease of the urethra or bladder to which these sensations could be attributed. About two years ago he acquired a specific urethritis which lasted acutely some weeks; then became chronic, and finally terminated at the end of six months. Six months later, that is to say, about eighteen months ago, he had an attack of painter's colic, accompanied by constipation, and then experienced intense pain in the rectum, which was most marked after defecation. This pain became constant, gradually increased to extreme intensity, and he suffered from it, both after and before a stool, or, as he expressed it, "whenever it begins to fill up down there."

With this pain in the rectum, he had a gradually increasing difficulty of urination, the urine passing in a small stream, and at times only in drops, accompanied with pain in the penis and in the pelvis generally.

At length the difficulty of expelling the urine became such that his physician was compelled to resort to the use of the catheter, in order to relieve the bladder of a certain amount of urine which was retained. For the two months preceding his coming under my observation his troubles, both as regards the pain in the rectum and the dysuria, increased so greatly that the use of the catheter was continuous, and the latter finally set up a mild form of urethritis, which aggravated his symptoms. The pain referred to the rectum and to the bladder became so severe that he was obliged to resort to hypodermic injections of morphia. When I first saw him, the man's condition was pitiable. He was anæmic, weak, and in constant pain, unable to empty his bladder without the use of the catheter, and under the necessity of being constantly under the influence of morphia. He was unable to discriminate between the pain in his bladder and that in his rectum. He was tormented with frequent desire to urinate, and although he could expel some urine with great straining, the feeling that his bladder was not emptied was so intense that I could hardly restrain him from passing his catheter, which he always carried in his pocket for the purpose. I sent him into St. Luke's Hospital, and on the next day examined him. His meatus urinarius admitted 32 French bougie à boule. At four and three-fourths inches was a stricture of 26 French. A solid sound of the latter size (26 French), after being obstructed for a few seconds at the membranous urethra, slipped into the bladder. On withdrawing, it was strongly held by the urethra, which alternately relaxed and contracted upon the instrument until the latter was free in the penile portion. Up to this time it had seemed to me that his urethral difficulty was the principal one, and possibly the cause of his rectal pain. But here was evidently a spasmodic condition of which there could be no doubt, and I questioned what was the cause of it. It is true that such a condition in the deep urethra might be due to a stricture of large calibre in the penile portion, and if it had been nearer to the meatus I should have paid more attention to it; but inasmuch as the patient complained so greatly of the pain in the rectum, I thought that perhaps the secret of the trouble might be found in or about the latter. On exposing the anus it was found to be violently contracted. The anal region was very sensitive and it was only with great difficulty that he could be induced to relax the sphincters sufficiently to enable me to find that he had three bluish-red exceedingly painful fissures of the anus. This seemed a good opportunity to test the question of cause and effect by observing the result of treating the anus alone. Accordingly he was etherized, and the sphincter-muscles were paralyzed digitally until the whole anus was pulpy. Nothing whatever was done to the urethra, and his catheter was taken away. This was on June 7th. On the 9th it was recorded, "The patient passed urine and fæces spontaneously, and with much less pain, being but slight during urination and not nearly as great after defecation."

From this time on his improvement was progressive. There was none of the spasmodic straining to empty the bladder, there was no retention of urine, and the urethritis gradually subsided. Ten days later, a sound as large as could be insinuated through the stricture at 4¾ inches, namely, 30 French, was easily passed into the bladder, without any resistance and without any spasmodic contraction about the instrument upon its withdrawal.

On June 26th he was discharged from the hospital cured. For the past six months he has been intermittently under my observation. He has been treated for the "painter's colic," and has had none of the obstinate constipation, no pain in his rectum, and no trouble whatever with his urethra or bladder. A brief analysis of this case will make clear the points to which I wish to call your attention.

He seems to have had some mild symptoms referable

[1] Read before the New York Academy of Medicine, Section in Surgery, January 14, 1889.

to the urinary apparatus six years ago, but whether these were due to any rectal disease at that time, I am unable to say. He might have had slight disease which healed spontaneously. At all events, there was an interval of comparative freedom from suffering, up to the severe attack mentioned in the history, and soon after he had urethral and bladder symptoms added to those of his rectum.

It is plain that the constipation, associated with his lead-poisoning, was the exciting cause of the fissures, to which may be reasonably attributed the pain in the rectum.

As these progressed, his sufferings continued to increase in intensity, and the symptoms became so commingled that it was impossible for him to discriminate between those of difficult urination and those from the fissures of the anus. Without doubt the attack of urethritis from which he had just recovered greatly increased the sensibility of the urethra, and the response to the reflex action became of a higher grade and rendered the contracture of the muscles more persistent.

It will be observed that the stricture of large calibre in the urethra received no treatment, and, therefore, it seems to me that the conclusion is inevitable that the permanent contraction of the muscles of the deep urethra in this case was due to a reflex from the spinal cord, set up by an intense irritation of the sphincter ani, as evidenced by the entire relief afforded by the treatment of the latter.

127 East Thirty-fourth Street.

CHONDROMA.

By HENEAGE GIBBES, M.D.,

Professor of Pathology, University of Michigan.

I have lately examined two cartilaginous tumors which present features of interest. The first was removed from the mammary gland of a bitch. This tumor to the naked eye showed a nodular, lobulated appearance, and was of considerable size. Sections taken from various parts showed the same structure. The growth consisted of masses of cartilage, spindle-celled sarcoma, and the remains of the original gland. At first sight this would appear to be an ordinary chondrifying sarcoma, but this was not the case. The islands of cartilage were distinctly separated from the sarcomatous tissue, and, although existing side by side, appeared to have no connection one with the other. The masses of cartilage were hyaline, and in the centre resembled normal adult hyaline cartilage, except that the lacunæ were more irregularly placed and rather less in number. The central portion of each cartilaginous mass took the usual deep stain with logwood, in the same manner as ordinary adult hyaline cartilage, while the periphery stained more faintly. The peripheral portion of the cartilage showed a marked fibrillation of the matrix, more pronounced at the edge, and the cells were very irregular in shape. Some of them showed traces of a capsule, while others had none. Many were much branched, and no lacunar space could be seen. The cartilaginous masses in fact represented the appearances seen in a growing normal permanent cartilage, having, however, the lacunæ and cells rather more irregularly placed. The development of this hyaline cartilage could be distinctly traced in numerous instances from the fibrous connective tissue on the outside of and between the masses of cartilage. This fibrous tissue was in an active state of growth and crowded with young connective-tissue corpuscles. So far, there was nothing beyond the formation of a pure chondroma from the mesoblastic elements of the gland. But lying among these cartilaginous masses were tracts of spindle and branched cells which were evidently of a sarcomatous nature. They appeared to be entirely distinct from the fibrous tissue which was developing into cartilage, although lying in close contiguity to it, and their reaction to staining agents was also markedly different. In these cells another process was going on; that is, the formation of bone, if it can be called bone where no lime-salts are deposited by the bone-forming cells. The appearances presented were exactly similar to those of cells laying down bone in the ordinary manner, only they deposited some material which appeared to be entirely organic and certainly contained no lime-salts.

The material formed by the cells had an entirely different chemical reaction to that of the cells themselves. It appeared to be distinctly acid, and this may account for the salts not being deposited. Each cell seemed to be acting the part of an independent osteoblast, and as the material formed by each cell increased, it coalesced with adjoining masses until irregular trabeculæ were formed, resembling in appearance those formed in normal developments of bone in membrane. The cells remained plainly visible, and in many cases retained their processes. What remained of the original gland-structure had undergone pigmentation, showing as masses of cells of a bright-brown color; and some acini still remained, which were plugged with homogeneous casts of the same color.

Throughout the whole tumor indiscriminate calcification had taken place. Some of the hyaline cartilage was calcified in irregular patches, as also some of the material formed by the sarcoma-cells, and in some dense fibrous tissue the same thing had occurred. The lime-salts appeared to have been deposited everywhere without any consideration as to the kind of tissue, and this was not materially altered by the process, as was shown on removal to the lime-salts. What appears to me to be peculiar in this case is, that two processes should go on alongside one another in the same organ, both neoplastic and yet having different results; in the one, resulting distinctly from ordinary fibrous tissue, a normal hyaline cartilage is formed—in the other, from sarcomatous cells, a kind of spurious bone is produced.

I have notes and specimens of a number of cases where true bone is developed by sarcoma-cells, and of others where various fibroid materials are formed by them, but I have not met with any case resembling the one I have just described.

The second tumor occurred in the human epididymis, and is of interest as being a pure chondroma in which every stage of development can be observed.

The tumor was large and nodulated, and on section showed the glistening appearance of cartilage. Under the microscope round or oval masses of hyaline cartilage existed among altered tubules. These cartilaginous nodules were in every stage of development, appearing first as small collections of cells similar to the mesodermic cells from which normal connective tissue is formed. In a further stage these groups had increased in size by the growth of the individual cells, and these had become oval or spindle-shaped, resembling the prochondral tissue in ordinary development. In further advanced nodules the cells had become more differentiated, and others showed the first formation of the capsule round each cell. In the next stage the nodules were similar to parenchymatous cartilage, and after this there was a gradual separation of the cells by the formation of a hyaline matrix, until a point was reached where the appearances were those found in fœtal cartilage.

The process had not passed beyond this stage, the hyaline matrix was perfectly homogeneous, and the cells irregular in shape, pointed or starlike, and the lacuna corresponded to the shape of the cell. In no part was there the regular form of lacuna and cell found in adult cartilage. It was difficult at first to make out the relation of this new tissue to the ciliated columnar cells of the tubes, but after careful search it could be seen, in many sections, that the growth commenced outside the membrana propria, and gradually grew into the tube, displacing the epithelium as it advanced. In some places the cartilage had grown completely round the epithelium and enclosed it, some of the columnar cells remaining in a

small space in the centre of a nodule of cartilage. In the majority of cases, however, the lining epithelium had become disintegrated, and was represented by a granular amorphous débris. Slight calcification had taken place in some of the cartilaginous nodules.

This case differs so much from ordinary chondroma of the testis, in the regularity of the process by which the cartilage is formed, that I think it will be of interest to morbid anatomists.

ANN ARBOR, January 7, 1889.

THE MEDICATION OF THE CERVIX UTERI BY MEANS OF SOLUBLE CAPSULES.[1]

BY H. A. SCHWENDENER, M.D.,

CLEVELAND, O.

WE can all recall the mental depression attendant upon the slow or indifferent results of our early attempts in the treatment of disease of the cervix uteri, and the disgust and self-distrust excited by the almost equally discouraging effects of our later and better planned efforts; followed in many cases by a lapse into a state of patient resignation to the caprices of diseased cervical tissues; and in not a few by a state of perpetual dissatisfaction with gynæcological work in general, and unsound cervices in particular. The most noted and successful of gynæcological authors and clinicians, while positive upon all points of pathology in these cases, and rich in therapeutic expedients, are compelled, even after making a favorable prognosis, to state that the duration of the case must be long and the treatment tedious.

For several years I have been in doubt as to whether the very slow, or even totally negative, results of non-irritating applications to the cervix uteri might not be due, in part at least, to failure of the medicinal agent to remain in contact with the diseased surface. Owing to the non-fixity of the uterus, contact with the vaginal walls is apt to remove a large proportion of any medicament applied to the surface of the cervix, and more or less of that which is left is very likely to be washed away by the local secretions. If a tampon is introduced with a view to preventing this, I am convinced that not infrequently, at the moment it is freed from the rim of the speculum and released from the forceps, it is given a push sufficient to send it into Douglas' cul-de-sac, carrying with it the medicine wiped from the very place where it is specially desirable it should remain. Occasionally, after adjusting a single tampon with special care, I have found, on examining the patient in the standing position, that the cotton but imperfectly covered the cervix. This gave rise to a feeling of doubt as to whether, when a single medicated tampon was used, it might not be displaced by the dry protective one placed over it, or pushed aside when the instruments were withdrawn; so for years I have carefully packed, or, rather, covered, the diseased surface with small medicated pledgets before placing the dry tampon, if such be required.

To be sure, there was no room for such doubt ten years ago, when, in accordance with the clinical teachings received in college, I habitually used a single tightly rolled tampon, large enough to uncomfortably fill the vagina, leaving no room for the index-finger to ascertain the state of the cervix after its introduction. A very few years showed the great superiority of soft, loose little cushions, easily adapting their shape to fit every curve and motion, over the large, firm, awkward props then used.

Perhaps others are more skilful than I, or less self-distrustful, and able to believe their tampons exactly in place, doing steady, efficient work till removed at the time specified. But, however efficacious the faith of the doctor in his remedies may prove in certain cases, certain am I that the duration of these troublesome cases of cervical disease was in no wise changed by my waking up to the fact, that placing a tampon in the neighborhood of the cervix did *not* insure prolonged contact of the remedial agent with the os externum.

For a year or so, covering the cervix with a medicinal paste, or smearing it with oil or vaseline to insure the adhesion of a powder, proved a great help to me, but now I find the application of soluble medicated capsules, fitting closely over the os, much more satisfactory; and until I devised these capsules, although my treatment of this class of cases was by no means unsuccessful, yet the results came so slowly as to be often discouraging. I am not aware that the duration of treatment was longer in my hands than in the hands of others, but now, after six months' experience in the use of a more certain and rational mode of treatment, the tediousness of the old seems to me almost intolerable. These capsules are made by Mr. L. E. Hinckley, of this city, and are one and one-fourth inch across, one-half inch deep, and being mainly composed of white wax and coca butter, melt slowly at the temperature of the body, keeping the medicinal agent for several hours in contact with the diseased surface. They may be easily introduced through an ordinary speculum, and once in position are not easily displaced, the warmth of the cervix causing close adhesion. I speak of introducing the capsules through an ordinary speculum, because, with the great majority of the profession, I am unable to always have a trained assistant at hand, and hence seldom use Sims' speculum. Indeed, I have several times satisfactorily placed these capsules without using any speculum at all (in cases where the vaginal orifice was very large), and have found them in perfect position after the patients have walked about the room, stooped, crouched, etc., and this, too, without a retaining tampon. A dry, non-absorbent tampon should, however, be used to insure longer contact of the medicine with the diseased surface, and to protect the clothing of the patient. I have removed such a tampon ten hours after introduction and found the capsule about half melted, and the whole cervix bathed in medicated oil. In from twenty-four to thirty-six hours after introduction the oil has been almost entirely absorbed. At this time a hot injection has a good effect. In one instance, in which two astringent capsules were used, after eighteen hours more than one capsule remained solid.

Since the middle of May I have used these capsules almost daily, and with the most gratifying results, especially in cases of old chronic erosions. In many cases no other treatment was used; in some I painted the cervix with iodine, or used a caustic application before applying the capsule; and very often used also a glycerine tampon. The formulæ used have been:

No. 1.	Iodoform.....	gr. v. in each.
2.	Iodoform.....	gr. iij.
	Tannic acid.....	gr. v.
3.	Ext. belladonna.....	gr. ½
4.	Ext. belladonna.....	gr. ½
	Opium.....	gr. j.
5.	Oxide zinc.....	gr. v.
	Bismuth subnit.....	gr. iij.

I am now experimenting with flexible gelatine capsules, but do not think they will be as efficient as those composed of wax and coca butter. Of course almost any formula may be used, or the action prolonged by using two of a kind, or modified by using one of each of two different kinds, or by covering with a medicated tampon.

At first, the question of how best to place the capsule was rather troublesome. Forceps would not hold without crushing it, and to simply put it in the speculum and push it along was not a very satisfactory procedure. I have had an instrument made by Mr. Baster, of this city, which proves quite satisfactory. It consists of a slender metallic tube, eight inches in length, set in a convenient handle, and surmounted by three flaring prongs. Through the tube and handle plays a rod with a ring for the thumb at its distal extremity, and surmounted by a small, flat

[1] Read before the Cuyahoga County Medical Society.

disk. This rod is drawn down, the capsule impaled on the prongs and carried to its place, when the disk is pushed against the capsule, loosening it from the prongs and pressing it more firmly against the cervix. The instrument withdrawn, the tampon may be placed and the speculum removed with the certainty that the therapeutic agent will remain where placed, and continue its action from twelve to thirty-six hours. As the instrument is as slender as Simpson's sound, it does not at all obstruct the view, and the prongs are so constructed as to easily pick up the capsules without the aid of the fingers. The advantage of this is obvious when we consider how tenaciously the odor of iodoform clings to the hands.

My office practice is almost entirely gynæcological, embracing, of course, a large number of cases in which applications to the cervix are necessary. During the last six months I have applied these cervical capsules in almost every one of these cases, and with far more positive and satisfactory results than I ever obtained from any other mode of treatment. Indeed, I am now able to cure in about one-fourth the time I used to find necessary, having reduced the duration of treatment from *months* to *weeks*. In short, the capsules are neat, convenient, inexpensive (costing only about three cents each), and very efficient.

ANEURISM OF THE ARCH OF THE AORTA: SUDDEN DEATH WITHOUT RUPTURE OF THE SAC. REMARKS ON THE CAUSES OF SUDDEN DEATH.[1]

By JOHN S. ELY, M.D.,

NEW YORK.

The patient was a woman, fifty-five years of age, a native of Ireland, and a washerwoman; admitted to Bellevue Hospital toward the end of October. For five or six years she had noticed occasional swelling of the feet. For six months she had suffered from dyspnœa on exertion, which steadily became worse. Cough for about a month. Two weeks prior to admission she had noticed a tumor at the root of her neck. Dysphagia had been troublesome for six weeks or so, and there had been some pain in the region of the tumor.

Physical examination disclosed slight emphysema and bronchitis; somewhat rapid and feeble heart, but no evidence of valvular lesion; liver and spleen normal in size. At the root of the neck on the right side, just above the sterno-clavicular articulation, there was a soft, compressible, pulsating tumor about the size of a small hen's egg. The pulsation was expansile in character, but there was neither thrill nor bruit. Pulse in both radial arteries was equal; also in both carotids. There was very marked atheroma of the arteries. Urine showed no albumen, but a few casts and pus-cells. Laryngoscopic examination disclosed paralysis of the right vocal cord.

Patient remained in much the same condition, with considerable dyspnœa and some cough, until the night of November 12th, when she fell out of bed in her sleep. She was helped back to bed by the nurse, who left her apparently none the worse for her mishap. In about fifteen minutes the nurse returned and found the woman dead, lying flat on her back, with no indications that death had been preceded by either pain or convulsion. The inference was that the aneurism had burst.

At the *autopsy*, performed fifty-four hours after death, the body was found to be well nourished. The brain was not examined. On opening the thoracic cavity a tumor about 3½ inches by 2½ inches was discovered, partly adherent to the manubrium of the sternum, and consisting of a dense sac of fibrous tissue containing an organized clot of considerable size, and some serous and bloody fluid. This tumor was found to originate from the arch of the aorta, where the ascending portion passes into the transverse. The innominate artery was incorporated in the posterior wall of the sac. The pneumogastric nerve of the right side was much flattened and involved in the wall of the sac. The phrenic and recurrent laryngeal nerves were also pressed upon by the tumor. The ascending portion of the arch of the aorta was very much increased in size.

Heart was somewhat hypertrophied, flabby, and showed no lesion on the valves. Lungs were normal, with the exception of much pigment. Liver was normal in size, but showed slight congestion and fatty degeneration. Spleen was hard and small. Kidneys were both rather small; capsules adherent; cortex thin, markings indistinct. Whole kidney quite red.

There was very marked endarteritis in all the main arteries, and an organized clot was found in the left internal jugular vein about the middle of the neck. There was no rupture of any vessel nor of the aneurismal sac.

The problems connected with the cause of sudden death are discussed with such vagueness in the text-books that I have thought it might not be uninteresting to the Society if I were to use this case as a text for presenting to its consideration some of the physiological factors involved, with a view to directing attention more rationally to the investigation of such cases.

It was long ago discovered that the heart of a frog could be removed from the body and still continue to beat rhythmically for a very long time, if kept in a warm, moist chamber. Latterly, Martin, at Johns Hopkins University, has shown that the heart of the dog may be completely cut off from all connection with the cord and brain—isolated, as they call it in Baltimore—and still continue to beat regularly for several hours, provided only that its nutrition be kept up by a continuous supply of defibrinated dog's or calf's blood.

These experiments show that the essential elements of the heart-beat are situated in the heart itself, in the frog and dog at any rate; and thus far, there is nothing known in human physiology which renders a similar arrangement in man improbable.

Investigation has shown that the parts of the heart necessary to its activity are the intrinsic ganglia and the heart-muscle. The heart of a frog may be cut up in small pieces, and the portions containing ganglia will continue to contract rhythmically, while the portions destitute of ganglia are perfectly quiescent, thus proving that the ganglia are essential to the beat. We must then look to the heart itself for the source of the trouble in cases of sudden death due to paralysis of the heart.

But may not sudden death be due to some other process than paralysis of the heart? I think not. I cannot conceive of it as the result of any other process than sudden stoppage of the heart, and I cannot conceive of sudden stoppage of the heart as the result of anything else than paralysis of the heart. It is surprising that "spasm" of the heart should still be spoken of in the text books. Physiologists have never been able to produce spasm of the heart, and pathologists have not shown how any such phenomenon is possible. Still, Gairdner, in the article on "Angina Pectoris" in "Reynolds's System of Medicine" (vol. iv. p. 579, 1877), says that opinion as to the cause of death in that disease is divided between "spasm" and paralysis of the cardiac muscle. In direct antagonism to such a theory of "spasm" of the heart, physiology teaches that each contraction of the cardiac muscle is simple, like the contraction of ordinary striated muscle caused by a single galvanic shock. The interrupted current when applied to heart-muscle produces, not a continuous ("tetanic") contraction, but a series of single rhythmic contractions. In other words, the heart cannot be put into a state of "spasm" by means of the most powerful neuro-muscular stimulant known to us, electricity. Let us then rule out "spasm" as a possible explanation of sudden stoppage of the heart, and consider the causes and effects of paralysis of that muscle.

Marked differences in the physiology of heart muscle and ordinary muscle certainly exist, but still there seem

[1] Read at a meeting of the New York Pathological Society, November 28, 1888.

to me to be sufficient points of similarity to make the pathology of the one very useful in the elucidation of the pathology of the other.

The essentials to voluntary motion have been found to be (1) the nerve-cells in the cortex of the brain, (2) the paths of communication between these and the muscles, and (3) the muscles themselves; and decided lesion in any one of these is attended with paralysis. In the case of the heart, we have seen that the intrinsic ganglia and the muscle are essential to the heart-beat, and we must of necessity suppose paths of communication between these elements. Reasoning, then, by analogy, we must conclude that paralysis of the heart would result from lesion in the ganglia of the heart, in the paths of communication between these and the heart-muscle, and in the muscle itself.

There are, then, theoretical grounds for the belief that lesions in the intrinsic ganglia and in the heart-muscle may be sufficient cause of paralysis of the heart. What has pathological investigation advanced in substantiation of this theory? Owing to the difficulty in finding the intrinsic cardiac ganglia but few observations of their disease are on record. Iwanowsky [1] has published the results of his investigation of the changes which occurred in them in a case of typhus fever. The nerve-cells in the ganglia were swollen and opaque, with indistinct nuclei; and in some spots well-marked degeneration of the cells was observed, as well as slight changes of an inflammatory nature in the connective-tissue stroma of the ganglia. Wassilieff [2] found decided changes in the same structures in hydrophobia. But the most interesting cases have been reported by Putjatin.[3] Only five cases of heart disease were investigated, but in all of them marked lesions in the intrinsic ganglia were found. The first of his cases bears directly upon the point under discussion. It was that of a man about forty years of age, in whom no lesion could be found to account for his sudden death except those in the intrinsic cardiac ganglia. The heart-muscle in this case is said to have been normal. The lesions found by Putjatin in these cases were hyperæmia, increased production of connective tissue, fatty and pigmentary degeneration of the ganglion cells, and in one case calcareous deposit in the connective-tissue stroma.

Although these are but few observations, too few alone to be sufficient foundation for a theory, still, in substantiation of a plausible theory deduced from other data, they are of the greatest importance.

Paralysis of the heart as the result of inflammatory and degenerative changes in the cardiac muscle, as, for example, the interstitial myocarditis so commonly found in cases of angina pectoris, is matter of too common observation to warrant further notice here.

But, it may be asked, if sudden death is simply due to paralysis of the heart-muscle, how is it that this comes on suddenly, paralyses in the skeletal muscles being so often slow in development? I answer that I do not consider paralysis of the heart to be always developed suddenly—far from it—and that in paralyses of the skeletal muscles we have occasionally a very rapid onset, for example, in infantile paralysis. Further, the conditions in the two cases are dissimilar. Whereas in the skeletal muscles the resistance to be overcome varies within very wide limits, in the heart-muscle it is practically always the same, variations in arterial pressure being comparatively very slight. In the skeletal muscles the power to move the limb is usually preserved long after distinct weakness can be determined, but usually there comes a time when this power to move the limb is lost too, and that suddenly. In the heart-muscle the rhythmic beat continues until a moment comes when the resistance can no longer be overcome, and when the heart-beat must of necessity stop suddenly.

It remains now to mention certain extrinsic processes to which sudden stoppage of the heart has been attributed.

There are in the central nervous system two mechanisms regulating the heart-beat, the one accelerating, the other inhibiting. Of the accelerating mechanism it is not necessary for us to say more than that its sole function, so far as known, is the increase in frequency of the cardiac contractions, and that it consequently has nothing to do with the subject under discussion. The inhibiting mechanism is, on the other hand, closely connected with it. The centre of this mechanism is located in the medulla oblongata, and is connected with the heart through the vagus nerve. Stimulation of the centre or of the vagus causes slowing of the heart-action, but, in order that complete stoppage be produced, the stimulus applied to the vagus nerve must be of very considerable strength and must be suddenly applied—very gradually applied stimuli, though of considerable strength, being ineffectual. For this reason it is thought that sudden stoppage of the heart as the result of stimulation of the vagus nerve by tumors must be extremely rare. In these cases the pressure upon the nerve must increase so gradually that entire disintegration of the nerve may be produced without sufficient stimulation to cause inhibition of the heart. In connection with the consideration of stoppage of the heart as the result of stimulation of the inhibiting mechanism, it must be borne in mind that the stimulus may be applied to the centre reflexly. The sudden stoppage of the heart obtained by striking a frog upon the belly is a familiar example of this, and all sudden death as the result of "shock" must be explained in this way.

The recurrent laryngeal nerve is an important path along which impulses may pass to the inhibiting centre in the medulla oblongata, producing sudden inhibition of the heart reflexly. This is, I think, the explanation of those cases of sudden death following instantly the lodgement of a foreign body in the larynx, to which reference was made at the last meeting.

In conclusion, then, I am of the opinion that the lesions which may cause sudden death should be looked for in, 1, the cardiac muscle; 2, the intrinsic cardiac ganglia; 3, the inhibiting centre in the medulla oblongata; 4, the vagus nerve; and, failing to find any adequate lesion in these parts, the possibility that death may have been caused by reflex stimulation of the inhibiting centre is not to be lost sight of.

[1] Iwanowsky: Zur pathologischen Anatomie des Flecktyphus. Journal der normalen und pathologischen Histologie und der klinischen Medicin. 1876.

[2] Wassilieff: Ueber die Veraenderungen des Gehirns und der Herzganglien bei der Lyssa. Centralblatt f. d. medicin. Wissenschaften, 1876. No. 36.

[3] Putjatin: Ueber die pathologischen Veraenderungen der automatischer Nervenganglien bei chronischen Herzkrankheiten. Virchow's Arcniv, lxxiv. (1878), 461.

Absorbing Power of the Normal Urethra.—Dr. Phélip has found that the normal urethra of the dog possesses the power of absorbing sulphate of atropine in solution, but that this absorption is much less active than generally supposed, and is not to be compared with the absorbing power of cellular tissue, and is but little more marked than that of the normal vesical mucous membrane, if both parts are placed in the same condition (*The Therapeutic Gazette*). In order to obtain equivalent results, the author has found that it is necessary to inject subcutaneously one-fortieth the amount injected into the urethra, while three or four times the amount injected into the urethra must be introduced into the bladder after it has been emptied to produce similar results. The absorbing power of the bladder is more marked when that organ is distended than when emptied. In the former condition it is about one-half as active as the urethral mucous membrane in the dog. Urethral absorption occurs principally in the deeper parts of the urethra.

In Tien-Tsin, China, according to the *Semaine Médical*, cholera is raging. The mortality of the disease is upward of sixty per cent.

A CASE OF ACUTE ULCERATIVE ENDOCARDITIS LIMITED TO THE TRICUSPID VALVE, WITH AUTOPSY.

By JOHN TRUMBULL, M.D.,

VALPARAISO, CHILI.

On October 23, 1888, I was invited to a consultation at the German Hospital of this city by the attending surgeon, Dr. Olof Page (University of Pennsylvania), whose interest and kind assistance have enabled me to report the case.

The following history was given: G. B——, an officer on a steamer plying between this and Hamburg, was sent to the hospital, October 19th, as a case of typhoid fever. He had been in capital health till within eight or nine days before reaching port, when he began to sicken with chills, fever, headache, inability to continue work, great weakness, loss of appetite, and slight diarrhœa.

Physical examination, made by Dr. Page on entrance, was mainly negative. Slight dulness was detected at both bases behind, but owing to the clear breathing sounds did not attract attention. The heart was normal, abdomen not tympanitic, no tenderness to be elicited on pressure, no gurgling or rose spots, but enlargement both of liver and splenic dulness. Since entrance the stools have been natural; and the only marked feature the distinct irregularity of the temperature, which twice or thrice in the twenty-four hours would shoot up to between 103.2° and 104.4° F. and after antipyrine drop to 98.6.° The urine had been normal in quantity, albuminous, but without casts or blood.

Two days preceding the consultation, Dr. Page, while making his visit, had been called to see the patient because of sudden dyspnœa and cyanosis. Nothing could be discovered to explain the condition. A provisional diagnosis of pulmonary thrombosis was made, and after the patient was bled and dry-cupped, nitrite of amyl, gtt. ij., was given in brandy every two hours. The following morning he was much better, though a similar attack came on later in the morning, and when we saw him together on the morning of the 23d he was in one.

Patient lying down, a strong, strapping man of twenty-eight years, profoundly cyanosed, not merely about the face and neck, for the entire body had a deep bluish look, teeth chattering, and bed shaking. The intelligence was clear and, so far as was possible under the circumstances, the patient gave a distinct account of his illness. Respirations 60, and labored; pulse 120, regular, but soft and small; temperature 101.4° F.; tongue moist and clean.

Careful examination of the chest revealed flatness at both bases, extending as high as the sixth spine, with absence of voice sounds and faint but clear respiratory murmurs. In the left infra-clavicular region a patch of dulness with diminished breath-sounds, without râles or alteration in pitch, was found. A hypodermic needle introduced in the left base immediately filled with pure blood. No increase in the area of cardiac dulness. Valvular sounds normal, with the exception of an altered systolic at the base over the left of the sternum, spoken of as a "probable murmur" at the pulmonary valves. No abdominal tympanites, no gurgling or tenderness, spleen and liver both considerably enlarged.

Typhoid fever was set aside, because of the absence of surroundings to account for it; absence, too, of the characteristic features, diarrhœa, tympanites, tenderness, hebetude, and chiefly because of the irregular pyrexia, frequent rigors, profound cyanosis and physical signs discovered in the chest examination.

Pulmonary thrombosis was excluded because of the repetition of attacks so severe that had the cyanosis been due to it death would speedily have occurred, and the failure of it to account for the small patch of consolidation, double pleuritic effusion, hemorrhagic in character, fever, enlargement of liver and spleen.

Acute double pleuro-pneumonia likewise we ruled out because we did not feel the effusion was sufficient to warrant such orthopnœa, even with the added patch of dulness that might be considered a centre of beginning pneumonia. Further, it would not explain the repeated chills, irregular and intermitting temperature, and it did not touch the enlarged condition of the abdominal viscera.

Intermittent fever was considered and thought to approach nearer than any affection considered so far to cover the case. There were enlarged splenic and liver dulness, recurring chills every morning, fever and sweating, but the fever continued after the attacks had passed away or recurred at irregular intervals during the day, the chest condition was unexplained by it, and it was inadmissible to suppose that, during a sea voyage, one who had not been off his steamer since leaving Hamburg could, in robust health, be stricken down with intermittent fever.

Acute miliary tuberculosis would cover loss of appetite, headache, prostration, irregular fever, and cyanosis, and chest signs with enlargement of liver and spleen; but there was no mere cyanotic tinge of finger-nails and lobes of the ears, rather a general deep cyanosis, no cough, no wasting, no strumous look, good family history. Mainly on the ground of repeated severe chills and his robust frame we agreed to exclude it.

The result so far was that the case could not be covovered by acute miliary tuberculosis, intermittent fever, double pleuro-pneumonia, or typhoid.

Ulcerative endocarditis we thought would explain the course of the disease, repeated chills, cyanosis due to minute embolic processes in the lungs, the patch of consolidation noted in the left front, the presence of fluid in the chest, the enlarged liver and spleen, and the presence of albumin in the urine. Against it were the fact that the hypodermic needle drew blood (I have since thought the needle must have penetrated the lung-tissue), the absence of a distinct murmur, of any irregularity of the heart's action, palpitation or pain, confirmatory of an endocarditis, and the absence of anything to have caused the development of the disease. The patient had never had rheumatism, nor had he any wound as a point of possible pyæmic infection. Still, as primary cases do occur, we thought capillary embolism of the pulmonary vessels, with consecutive sepsis and embolic trouble elsewhere, from disease at the valves of the pulmonary arteries, as most probable and of the nature of a malignant ulcerative endocarditis.

Morphia, one-fourth grain, was given to allay the distress arising from the rigor and dyspnœa, and quinine with stimulants were ordered.

October 25th.—Saw the patient to-day, not in a chill, but with extensive and pronounced cyanosis. Breathing 54, pulse 120, regular, soft, and feeble. Physical signs unchanged.

Temperature chart very irregular, between extremes of normal and 103° F. On the 23d had three heavy rigors, and four on the 24th. Has begun to cough since last seen, and is annoyed by it; no expectoration.

The marked recurrence and frequency of the chills led us to more confidently declare the case one of ulcerative endocarditis of the right side of the heart, and hopeless.

On the 27th as such we showed the case to another physician, who agreed with us as to the physical signs noted, though declaring his inability to detect any murmur. He sustained that we had to do with a case of violent acute double pleuro-pneumonia, with a tendency to emphysema. The chest was aspirated, and this time bloody serum having thick flakes of lymph was withdrawn, ten ounces from the left side and six ounces from the right. Relief very slight indeed, if any. Flatness diminished, but breathing sounds did not alter much. No adventitious sounds heard at the back, while a few moist râles could be detected over spot of dulness in left front. We could not accept the diagnosis offered and saw no reason to abandon that already formed.

October 28th.—Obstruction to the aeration of the blood,

it seems to me, continues the prominent feature of the case, with irregular temperature and recurring chills. Cough now is distressing, but no sputum is raised. To-day the only additional symptoms are a beginning œdema of the feet and a slightly dry, brown tongue. The therapeutic measures have been limited to the free use of stimulants and cardiac tonics. For the fever phenacetin (since the first attack of cyanosis it was used in place of antipyrine) is given whenever required, but while sometimes after its exhibition the temperature rapidly falls to normal, again it continues to rise despite its use, even in fifteen grain doses.

October 29th.—Patient much feebler. Pulse, 132; respiration, 62. Oppression so much increased that he cannot lie, but remains seated on the edge of the bed. Feet and lower legs œdematous and with purpuric spots, pin-head to pea in size, irregularly scattered over both upper and lower extremities. On the dorsum of each foot a larger patch of hemorrhagic extravasation. Has distinct icterus. Patient died in sitting posture at 4 A.M., on the 30th, and we made an autopsy the same day at 9 A.M.

Autopsy.—Strong, young subject in good condition, with extreme lividity of head and upper thorax. Over chest and shoulders slightly raised purpuric spots. Same condition in extremities with dark blue, deeper ecchymotic patches, irregular in shape, varying from bean to size of the palm and chiefly on the exterior sides; œdema of feet and lower legs.

Liver reached to within an inch of navel, and to the left as far as the mammillary line.

Opening the pleural cavities bloody serum escaped, estimated at twelve ounces or more from right side, somewhat less from left. Right lung shrivelled and shrunken with yellowish nodules visible under the surface. General roughness of visceral pleura and loss of glistening aspect. No adhesions except over an area size of a silver dollar where it was torn from the diaphragm. Lower lobe of right lung infiltrated in patches with reddish hepatization and multiple dull grayish-yellow spots of induration which on incision were found to be purulent foci. Left chest showed fresh adhesions on all aspects of the lung with the same general condition of embolic abscesses and here and there points of hemorrhagic infarction. Pericardium had a small amount of clear serous fluid, and over region of the tricuspid valve an elevation size of a thumb-nail was seen covered with a grayish-white opaque film. To the touch resistance felt from within like a nodule the size of a marble.

No enlargement of the heart. Left ventricular wall normal in thickness, cavity filled with soft, easily detached clots. Aortic and mitral valves intact and endocardium nowhere lacking in lustre. Right ventricle full likewise of post- and ante-mortem clots, a portion of which was with difficulty detached from the cordæ tendinæ. Opening the right auricle freely so as to look down on the tricuspid, two crumbly masses of vegetation, like two small flaps of warty growth, on the labia minora were seen, three-quarters of an inch long, one-half inch high, and flattened from side, to side looking upward toward the auricle, separating somewhat toward the remaining valve, which appeared wanting, while along the edge of its attachment to the heart-wall roughened spots with points of purulent matter were visible. The cordæ tendinæ were whole, and as seen from beneath the valves were intact. The vegetations grew from the auricular surface of the valves close to the edges, only two being implicated as stated, the third only having points of ulceration where closure made pressure against the verrucous growths.

Spleen large, pulpy, and very friable, weighed one and a half pound, without any infarctions or infective emboli. Liver enormously increased, weighing seven pounds, solid, firm, and of a grayish-yellow tinge—no abscesses. Kidneys slightly enlarged, capsules non-adherent. Removal disclosed pin-head yellow spots, small abscesses dotting the cortical substance. A wedge-shaped hemorrhagic infarction, size of a nutmeg, found in the right kidney.

Bristowe says, according to Bramwell, that "endocarditis and structural disease of the tricuspid valve are admitted to be so rare in the adult that there are few clinical or pathological records describing affections of that valve." This case is reported because of the rarity with which a primary vegetative endocarditis, limited to the tricuspid valves, is encountered, and the interest attaching to such a condition as described without the production of any distinct murmur. The growths must, it would seem, have prevented perfect closure of the tricuspid and yet the most thorough examinations, repeated, only gave a faint systolic blow along the direction of the pulmonary vessels leading out of the right ventricle. Osler says, that "even with extensive vegetations there may be no murmur present," as "there are many instances on record in which the examination of the heart was negative"; and this case must be classed among these, for the pathological conditions disclosed, one would have argued, must have given unmistakable physical signs, which were not present. Here we had an extensive verrucose endocarditis without auscultatory proof of its existence.

The diagnosis in this case was practically made by exclusion from an attempt to cover the whole set of symptoms. The pronounced disturbance with aeration when the respiratory sounds seemed clear pointed to occlusion of the pulmonary capillaries; and then we were driven to concede disease in the right side of the heart. That granted, and of the only form probable with the history, the consecutive pyæmic state covered the enlargement of the abdominal organs, while the passage of smaller emboli, through the pulmonary into the general circulation accounted for the albumen in the urine as due to metastatic abscesses of the kidneys. Only sixteen to eighteen hours before death did the manifestations in the skin, confirmatory of the diagnosis, appear; and throughout, from absence of cerebral symptoms, delirium, coma, or paralysis, one must infer that there was no embolic plugging or metastasis in the brain, as there was none in the liver and spleen.

Had one relied too implicitly and hurriedly on the results of the chest examination, to the neglect of the condition of the abdominal organs and urine, and the patient not been seen in one of the rigors, as the cyanosis was what absorbed the attention of the attendants, the case would very probably have passed for one of double pleuro-pneumonia. All cases of double or extensive disease should demand a thorough investigation, as to the possibility of their having a common cause in disease elsewhere.

Cases of ulcerative endocarditis, are generally classed as in type cardiac, intermittent, cerebral, typhoidal, or pyæmic. Here the irregular temperature, rigors, and metastatic processes would classify it as mostly resembling the pyæmic, though the pulmonary symptoms, dyspnœa and cyanosis, were the most pronounced and significant. In right-sided disease that would be expected, so that the pulmonary character, in the absence of any sign of valvular affection, would be the feature of its early stages, and only allow of its being classed as pyæmic in the advanced stages of the disease.

In this case the etiology is obscure. We had no antecedent rheumatism, recent or remote; no valvular disease; no trauma as a source of possible infection. The bacterial origin of the malignant form of this disease would seem to be well established; yet it must be past comprehension how a seafaring man, breathing the pure sea air, without any wound, in perfect health, should have had ingrafted on his tricuspid valves the staphylococcus pyogenes aureus. The position of the growth on the auricular surface of the tricuspid valves would imply that entrance must have been effected through the venous system. Careful inquiry failed to elicit any existence of wound; but having lately read of pyæmia as occasionally resulting from a urethritis, its existence was investigated, to see if even malignant ulcerative endocarditis might be attributed to infection along a mucous tract irritated by the gonococcus; but it was not present.

The case, therefore, one is compelled to admit as a case of *primary* ulcerative endocarditis, solely implicating the tricuspid valves.

Clinical Department.

CUPPING-GLASSES AS DIAGNOSTIC AND THERAPEUTIC MEANS.

By GEORGE WHITE, M.D.,

CHICAGO, ILL.

"Hues which have words, and speak to ye."[1]

When Otto von Guericke, of Magdeburg, invented his first toy hemispheres, it is probable that he never thought he was making that which would be sometime of inestimable value to the medical fraternity. However, the idea was put to a practical use in therapeutics, and the cupping-glasses became a part of the armamentarium of the barber-surgeons.

The use of these little instruments has fallen into decay, and it behooves us to resume their possession and assign to them their proper place in diagnosis and therapeusis. Advertising quacks in this city are forestalling the regular practitioners, and are making a good living by using the cups on all diseased (and supposedly diseased) conditions of our gullible sufferers.

So much attention is paid to new methods of diagnosis and treatment that many arts of fifty years ago are lost. Bleeding and cupping (which in the heyday of our fathers were the great routes to health in this life, or happiness in the hereafter) are now diagnostic and therapeutic means almost unknown. Bleeding is very properly eschewed in many diseases, but never have I seen ill result from the use of dry cups.

During the past six or seven years I have carried the glasses in my satchel, and upon every possible occasion experimented with them, to determine their utility in the exact localization of diseased areas; but among my medical acquaintances I do not know a single individual who does likewise. Yet these appliances are, I doubt not, more frequently needed than the much-abused obstetric forceps.

As diagnostic instruments the cups cannot do any more harm than the hypodermic syringe or the aspirator, nor so much as the probe, sound, or bistoury. As therapeutic agents their effects can be instantly controlled. Can this be said of the rest of our great army of remedies? What are the dangers of our numerous drugs? They are legion. What are the risks in dry-cupping? *Nil.*

I do not deny that the herb-teas of our grandmothers and the elegant preparations of to-day are valuable, but I do claim that many times they could be well replaced by these glass hemispheres.

In applying the cups to various portions of the body in disease I formulate the results of my observations thus: The greater the congestion at the point of contact the greater the cutaneous discoloration.

Often have I been enabled to accurately outline a congested area of deeply lying tissue by the aid of these instruments alone. Allow me to cite a few cases to illustrate the method of diagnosis, and at the same time to refer briefly to the accompanying therapeutic results:

In May, 1887, I was summoned to the bedside of a thirteen-year-old boy. He had just emerged from a severe general convulsion. The eyes were extremely bright and the skin had the peach-bloom of youth. A study of the family history elicited the fact that the father of the boy had died after an operation for renal calculi. My patient presented no genital trouble. Being of Jewish origin, he had been circumcised in infancy. Urination had been normal; defecation, ditto. He had received no injury by blow or fall. Deep pressure alongside the vertebra showed no tenderness except in the lumbar region. Opposite the tenth and eleventh ribs there was no special sensation. Over, or rather posterior to, the right kidney there was some sensitiveness. Posterior to the left kidney deep pressure caused intense pain. Application of the cups resulted as follows: At the first points there was a delicate pink hue. About the second location the color was a dark red. In the last position the flesh was almost black. It was a case of acute renal congestion. My patient regained his usual health in a couple of weeks. Another attack occurred in January, 1888, and yielded in a few days, as before, to the cups.

Another marked case was in a car-trimmer at the Chicago and Northwestern Railroad shops at Moreland, in this county. For several years the man had irregular attacks of deeply seated continuous pain in the lumbar region. One of our prominent West Side physicians had pronounced the trouble to be "neuralgia of the spine." The face was pallid and waxy in hue; eyes glistening. The patient complained that the upper eyelids seemed stiff and leathery in the mornings. There was almost constant nausea and recurring flashes of fever. Lately constipation supervened, but the urine remained normal in quantity, though a little high-colored. No microscopical urinalysis had been made till the cups had been used several weeks, and then, besides the large proportion of albumin and mucus, I could detect triple phosphates, a little pus, but no casts. Following the lumbar pains there had been sciatica on both sides. After a half hour's cupping the right renal region was a deep pink in tinge; left, dark red and covered with more deeply colored mottles, each about the size of two pin's heads. This half-hourly cupping was repeated twice each week. In two months the coloration after cupping was as follows: Right renal region, light pink; left, still mottled, but less marked than at first. Persistent prosecution of this procedure for three months cleared away the pain, dark coloration, and mottles. It was evidently a case of incipient lardaceous kidney. My patient is now doing his ordinary carpenter-work, and though he has an occasional return of his painful back when he exposes himself to inclement weather, he eats and sleeps like the average mortal.

Since November 24, 1888, I have been attending a lady suffering from fecal impaction of the colon, supervening in the course of a remittent fever. Her previous history, dating back to 1874, was as follows: Pregnancy, cystitis, parturition, laceration, ulcerations of uterus and urethra, fecal impaction of the colon, lumbo-pelvic abscess, fistulæ, surgical destruction of most of the recto-vaginal walls, chronic cystitis, etc. In this, the second attack of impaction, the cups were applied, and they told an odd story. Over the points of greatest continuous pain they caused a dark red tint, but the mottling showed most prominently along the left third of the transverse colon, the left curve of the colon, and the descending colon down to the neighborhood of the sigmoid flexure. This collection of mottles presented a very peculiar appearance, curving over the abdominal wall and being of a uniform width of about an inch and three-fourths, irrespective of the extent of surface embraced by the cups. During the first week the color in the left inguinal region was a very dark red; now it is a pearly hue while the glasses are *in situ*, but after their removal the natural tint appears.

A great beauty of this procedure in diagnosis is the simultaneous therapeutic effect. Five or ten minutes' application will give immediate relief in those slight congestions characterized by indefinite anterior and posterior thoracic pains that follow "taking cold." In a case of acute bronchitis, in a ten-year old boy, where the respirations numbered eighty-eight to the minute, I have seen immediate lessening of the dyspnœa, though the rapid respiratory act continued. Very frequently, in continuous, deeply seated pain, the cups are reliable substitutes for opiates, and never can produce the horrible results of those drugs.

A few cautions are necessary:

[1] Byron's Childe Harold's Pilgrimage, Fourth Canto, cxxix.

1. Use very little alcohol on the swab when about to burn out the air in the cup.

2. Do not keep a glass on the skin longer than two or three minutes at a time.

3. Avoid the edges of the scapulæ and ossa innominata.

4. Never place a cup upon the spinous processes of the vertebræ.

5. After each séance anoint the entire surface with carbolated vaseline, to prevent future superficial soreness.

As to the *modus operandi* therapeutically, I have no special theory. Sometimes the action seems to be by lessening the air-pressure on the tissue which covers the superficial capillaries, and consequently relieving the underlying congested area; sometimes it accords with our milder sedatives; sometimes the process seems to be wholly by mentality (?), like the darky's cure for the toothache, namely, put some red pepper in your eye and you will think so much about that eye that you will forget about the tooth.

However, be that as it may, there is a principle here involved, and we should not neglect it. It is our duty to ourselves and our patients to seize upon all means of exact diagnosis and rapid relief or cure. I offer these suggestions to my brethren to do with them as they will.

A NOVEL METHOD OF INTUBATION WITH ORDINARY RUBBER TUBE.

By GEO. O. WILLIAMS, M.D.,

GREENE, CHENANGO CO., N. Y.

Quite a number of fatal cases of diphtheria die in consequence of the obstruction to respiration caused by the closure of the fauces from tumefaction of the tonsils and uvula, the larynx at the same time being intact. The majority of those which fail within the first forty-eight hours are from this cause.

The case in question was of this character. The disease had existed forty hours. The child's age, eleven years. The fauces and soft palate were covered with exudation. The throat was closed. Respiration very labored. Constant restlessness had been present for thirty-six hours. All the indications of slow suffocation were present. The child was informed of what we desired to accomplish, and his promise to assist as much as possible was secured.

A soft rubber tube was then passed beyond the obstruction, and its extremity left just at the larynx. The boy nodded his head to indicate that it gave him relief and was in proper position. Within three minutes he dropped into a motionless slumber of absolute rest. The distressing breathing was instantly relieved.

The sleep continued an hour. At the end of that time a little mucus obstructed the tube, and he awoke and pulled the tube from its place. It was immediately replaced. The tube extended six inches from the mouth. An attendant constantly supported this extremity. An ink mark on it, on a line with the teeth, designated the proper distance for introduction. After a few hours the care of the tube was intrusted to the friends. It was maintained in use for seventy hours. It was removed for cleansing, and for nutrition and medication at proper intervals. At the end of that time the subsidence of the tumefaction permitted its discontinuance. The tube measured seven-eighths of an inch externally. No complication occurred in the case and a good recovery followed. I do not recall any published account of such a procedure in diphtheritic cases, but I think quite likely, from its simplicity and efficiency, that it must have been in use by others.

The "Funny Bone."—*Teacher:* Why is the arm bone called the humerus? *School Girl:* Because it has a funny bone.

Progress of Medical Science.

Case of Traumatic Aneurism in a Child under One Year.—The patient, a girl, aged eleven months, while at play, fell upon the floor, sustaining a bruise on the left cheek, which was followed subsequently by the development of a large pulsatile tumor of the size of a hen's egg. The health of the child in no way suffered from the swelling until one day when she accidentally scratched the skin covering it with her nails; inflammatory symptoms supervened, and a medical man ordered poultices to be applied, subsequently puncturing the tumor. Alarming hemorrhage followed the puncture, which could not be controlled. When Mr. Bose, who records the case, was summoned, he found the child almost bloodless. The dressings were removed from the wound and the clots turned out; a small branch—the malar—of the facial artery was feebly spouting, and was at once twisted. The soft parts around the wound were sloughy. The following morning it was seen that the hemorrhage had still continued; the sloughing process had spread to the outer canthus of the eye. A consultation was held, and it was decided to adopt further measures. The facial artery was tied, the inflamed tissues were freely incised, all the clots were removed, and the wound dressed with boracic ointment. The hemorrhage ceased from this moment, but the child succumbed after three days.—*Indian Medical Gazette.*

Tumor of the Brain and Accidental Injury.—The following case, observed by Dr. Kaufmann (*Vierteljahrschrift für gerichtliche Medizin*), is interesting chiefly from a medico-legal point of view. A house painter was thrown from a ladder, striking in his fall the corner of a piece of furniture. From this time on violent headaches and pains in the back were frequent. Immediately after the fall he remained several hours unconscious. After slight and transitory improvement, during which he returned to his work, the head pains returned, mental weakness, slowing of pulse, narrowing of the field of vision, and loss of appetite came on. Transitory mania was also observed during the cephalalgic attacks, finally almost total blindness and paralysis of the left arm supervened. Death took place six months after the accident. Post-mortem examination showed death to have resulted from a sarcoma. The tumor was of comparatively recent growth; the oldest pathological cerebral lesion was evidently an apoplectic cyst which was surrounded by a cheesy tumor. This cyst was pronounced by the pathologist to correspond to an effusion of blood of such amount that it could not have taken place without visible symptoms. It was extremely probable that the hemorrhage was the result of the fall, and that the loss of consciousness noted was dependent on it. The hemorrhage was the direct cause of the development of the tumor, as injuries, falls, and the like were undoubted and recognized causes of cerebral tumors and their most frequent explanation, especially in the case of sarcomata. All other explanations were only hypotheses. The histological examination of the tumor explained its rapid development in so short a time. The conclusion was that the fall led directly to the development of the tumor, and through this to death.

Unilateral Kidney and Nephrectomy.—Cases have been recorded before now in which, after removal of a diseased kidney, it has been discovered that the organ was the only one of its kind, a fact which naturally is not without its influence on the success of the operation. At a society meeting last week, by a curious coincidence, two kidneys, from different subjects, were shown, one of which had been removed post mortem from a woman who had been operated on for ovarian tumor, and which proved to be unique, no trace of the other kidney being found. The second had been removed on account of kidney disease, and was therefore a nephrectomy proper. If the con-

dition which obtained in the first case had existed in the second, the operator would evidently have been unable to report that his patient was enabled to leave the hospital, well, within a month. The very practical question arises, therefore, as to the means at our disposal for recognizing the absence of one kidney before proceeding to remove the other. Many surgeons advocate the performance of the operation through an incision in the median line of the abdomen, since it is then possible to ascertain the presence and condition of both organs. Dr. Fenwick claims that nothing is easier than to watch the flow of urine through the ureter into the bladder, thus affording proof positive of the existence of a duplicate secreting organ. It was pointed out that nephrectomy would only be undertaken for grave disease of a kidney, and were this kidney the only one, symptoms pointing to disease of both kidneys would probably be present. To put it another way, if a patient with serious disorganization of one kidney presented no general symptoms of uræmic intoxication, it might reasonably be assumed that excretion is being carried on by the other organ. Since the result of an error of this sort is the prompt and inevitable death of the patient, the matter is deserving of every consideration.—*The Medical Press.*

Partial Resection of the Symphysis Pubis in Operations at the Bladder.—Dr. Helferich in three cases has removed a portion of the symphysis pubis in order to afford readier access to the bladder. In one case the condition necessitating the operation was tuberculous caries of the symphysis itself. In the others it was carcinoma of the bladder, and great enlargement of the middle lobe of the prostate. He recommends a partial resection as giving sufficient room in most cases without interfering with the solidity of the pelvis. He makes a transverse incision and pushes back the soft parts. He pays but little attention to the periosteum, except that at the lateral portions of the pubis which are to be retained. He thinks it useless to attempt an osteoplastic resection of the symphysis, as frequently, in the cases in which this operation is done it will be found impossible to close the bladder wound. After reaching the bone he divides it on either side to the necessary depth, perpendicularly, with a broad, sharp chisel; and then placing the chisel horizontally at the required level, and beginning at one of the perpendicular lines, he divides the symphysis from before backward, carrying the chisel from each end of the exposed bone toward the centre. The upper portion of the symphysis thus loosened is easily removed. In the case of caries, complete union occurred in two months. The case of carcinoma of the bladder showed the great advantage of this method, giving free access to the tumor, which was upon the upper aspect of the posterior wall, and was excised together with sound tissue on either side of it. The bladder wound was sewed with catgut stitches. There was considerable strangury for a few days, but it gradually diminished, and healing was complete in three weeks. His case of prostatic enlargement died eight days after the operation, but was a very unfavorable one from the beginning—having had retention of urine, urethrorrhagia, etc., for some time previously. He considers the procedure an easy one in all respects, and one that can be completed in a few minutes, but recommends preliminary practice on the cadaver. The indications for the operation are large malignant tumors, some forms of prostatic hypertrophy, excessively large stones or encysted stones, cases of rupture of the bladder, etc.—*The American Journal of the Medical Sciences*, December, 1888.

Lipanine.—Lipanine is the name of a mixture of olive-oil (100) and oleic acid (6), which has been largely experimented with by Mr. Mering as a substitute for cod-liver oil. It is said to be far more digestible than the fish oil, and is taken by children without repugnance and without subsequent ill effects. The dose is from one to four teaspoonfuls, according to the patient's age, and the patients to whom it was given all improved in general condition and strength. The effects were altogether comparable with those obtained with cod-liver oil, but the advantages claimed for lipanine are its freedom from taste and easy toleration by the stomach.—*The Medical Press.*

Primary Nasal Diphtheria in Children.—Dr. Somma states that nasal diphtheria rarely occurs as a primary affection, though it is common enough as a secondary development from the pharyngeal form. He believes that when it occurs primarily it is usually an indication that there has been general infection of the organism, the local eruption being one of the symptoms. The varying degrees of severity of the disease are explained by difference in potency of the infective agent, and to this may be added the varying degrees of resistance of the tissues to the localization of the disease, and the varying degrees of resistance of individuals to the infective agent. The author believes, however, that in all cases of diphtheria which are primarily nasal, whether light or severe, there is an expression of a diphtheritic general infection. Age and sex have nothing to do with this localization of diphtheria. On the other hand, on account of the abundant blood-supply in the nose, on account of its continual contact with the air, and the infectious elements of the latter, which, suspended in the nasal mucus, are often in contact for a long time with the nasal mucous membrane, it is especially predisposed to the reception of infection. There is nothing peculiar about the anatomical condition of this variety. Symptomatologically it may be divided into a mild and a severe form. The former is without fever, without great disturbance of the general condition, and is characterized only by the presence of the local deposit in one or both nostrils. The severe form always has a preliminary febrile stage. At first there appears to be only a simple catarrhal coryza, but soon membranous deposits appear upon the nasal mucous membrane, the submaxillary glands swell, there is cough with occasional attacks of suffocation, the eyes and ears are involved, while the pharynx and larynx remain unaffected. In some cases the patients die after a few days with symptoms of general sepsis, in others the exudate is eliminated and recovery occurs, or the general symptoms remain in spite of local improvement and the cases end fatally, or the process may attack neighboring organs with an equally fatal result. The diagnosis is usually easy, excepting in rare cases in which the deposits are located so far back in the nasal cavities that they are not discovered. In such cases rhinoscopy is sometimes of avail in not very young children. The prognosis in the mild form is good, but in the severe form very bad. The treatment consists in irrigation of the nose with salt water, or one per cent. solutions of resorcin or salicylic acid, in the introduction of iodoform-vaseline, one to twenty, or in the insufflation of benzoic acid, alum, and tannin. Injections may also be made every three hours with solutions of acetic acid, lactic acid, or sublimate, one to four thousand. In the latter stages of the disease ointments of white or red precipitate may be used. Internally the carbolate of quinine in small doses may be given, and stimulants if collapse appears imminent.—*The Archives of Pediatrics*, December, 1888.

The Diagnosis of Inebriety.—All cases of inebriety may be classed as persons of undeveloped, degenerate, and disordered minds. The first class, the undeveloped, represents all grades of defective retarded growths, sometimes seen in external conformations of head and body. Grades of ancestral defects and brain failures, seen in faulty acts and thoughts. The second class, of degenerate brains, are those who are retrograding both in mind and body. Such cases frequently date from illness, injuries, shock, diseases of all kinds, and diseases of old age and of the nerve-centres. The third class, the disordered brains, are those who from ill-health, bad conditions of living and surroundings, have developed inebriety. Such cases cannot bear the strains, drains, or any extreme

circumstances which tax the energies and vigor of the body. In all these cases inebriety starts from unknown states and exciting causes, and these marked physical conditions are both primary and secondary. Inebriety is always disease and degeneration, and the fact often disputed is, can this disease be traced in any uniformity of symptoms or progress? Dr. Jackson has clearly pointed out that all disease follows a regular retrograde march, which can be outlined and studied as clearly as growth and development. Inebriety is no exception to the rule. —*The Quarterly Journal of Inebriety.*

CANCER TREATED BY CREASOTE.—Neudörfer has just published an interesting little pamphlet on the subject. Carcinosis, the author says, is very probably just as curable as syphilis or phthisis. The excision of a carcinoma, as of a hard chancre, is, as a rule, not far-reaching enough to prevent the infiltration of the surrounding tissues with the specific microbes and cells. He believes that the medicinal treatment of cancer should be tried more extensively than has been the case hitherto. The rind of condurango and Chian turpentine have often given promising results. There are also, as in phthisis, climates favorable for cure. On the plateau of Mexico and at the Cape of Good Hope, for instance, cancer is an exceptional disease. The principal office for the surgeon, in Neudörfer's opinion, is not the extirpation of the neoplasm, but the medicinal treatment of the cancer cachexia, which is the chief factor in bringing about the death. The treatment of cancer is naturally much like that of phthisis. Creasote, which has been found to stimulate the nutrition of the blood-corpuscles, is of equal value in cancer and in phthisis. He has obtained decided results in the treatment of cancer with the following preparation:

℞. Creasoti puri,
Sodii bicarb.,
Olei morrhuæ.....ää f. ʒ v.
M. Put in 100 gelatine capsules. Take three capsules three times daily, after each meal.

A very eligible substitute for creasote is creolin, as it is not only cheaper than the former, but is also a stimulant of digestion. He prescribes:

℞. Creolin..... ..... ℥ xv.
Ext. glycyrrhizæ, q. s. ut ft. pil. No. 100.
Sig.: Three pills, three times daily.

Locally, Dr. Neudörfer prescribes with the above pills:

℞. Creolin,
Ichthyol,
Iodide of potash.....ää gr. xj.
Vaselin,
Lanolin.....ää gr. xv.
M. F. ung. Sig.: Rub into the part three times daily.

Neudörfer boasts of three actual "cures" of cancer obtained with this treatment.—Cor. *Medical and Surgical Reporter.*

INTERMITTENT HYDRONEPHROSIS.—Dr. Landon has published a study of this subject, which is alluded to by the *Medical Press* as follows: He remarked that the disease was rare, but that it was known and mentioned as far back as 1650 by Tulpius. Other authors have also mentioned this curious condition. The case brought forward by him in 1880, in which the hydronephrosis turned to a pyonephrosis and left behind a renal fistula, was the ninth recorded case of the kind. He had since then observed four other such cases. By intermittent hydronephrosis he understood that accumulation of urine in the pelvis of the kidney, from some undefined cause, relieved by sudden emptying, and subsequently recurring. In his cases the hindrance to the proper outflow of urine was only imaginary. The most remarkable kind is that accepted in literature as bilateral spasm of the ureters that causes anuria. He said he had observed spasm of a similar kind in the dead body in attempting to pass hot water through the ureters. The ureter contracted so firmly that not a drop of fluid could be induced to pass. There were, however, two other kinds of occlusion, one from direct dragging and pressure of the ureter against the pubic arch, and the other from acute flexion or twisting of the ureter, or from insertion at an acute angle. As regarded the first kind, Virchow showed, in 1846, that a prolapsed and irreducible uterus had so pressed the ureter against the pubic arch that the ureter and pelvis of the kidney were distended with urine. The patient died of uræmia. Another case of double hydronephrosis showed that it must have been intermittent, or the patient could not have lived as long as she did. He had not yet succeeded in demonstrating this obstruction *intra vitam.* The second form of obstruction was frequent enough, as Cohnheim had shown. The stasis of urine persisted as long as its cause, and then the collected fluid flowed off. This was repeated so often that the elasticity of the pelvis of the kidney began to suffer, and it finally attained such a size that the tumor had even been mistaken for one of the ovary. The question arises as to how acute-angled insertion takes place. Virchow considers that it was congenital; Simon held it to be a necessary consequence, and he showed that when hydronephrosis takes place and the insertion of the ureter is not in the first place acute-angled, the ureter must take an acute-angled course and suffer lateral pressure from the gradually enlarging renal pelvis. The acute-angled insertion could not be congenital in the majority of cases, but it was remarkable that the affection was most frequently on the right side; and this was in favor of the assumption that the acute-angled insertion was acquired, and indeed produced by a movable kidney. The kidney sinks, and the hydronephrosis is caused by acute flexion or twisting of the ureter. The symptoms in his five cases were fairly constant; nothing was remarked except slight attacks. They all complained of occasional uneasiness, and of the feeling of a foreign body, but nothing as to the urinary function. One patient complained of attacks resembling renal colic. The objective symptoms were not striking at the commencement. Only when the tumor could be diagnosed an intermitting hydronephrosis might be assumed. As regarded palpation, fluctuation could not be detected in his cases, but the tumors were remarkably hard. Puncture was not always reliable, as the contents of the hydronephrotic sac did not always contain urinary constituents. After a certain time these were reabsorbed, and nothing but clear watery fluid like that met with in the case of echinococci was found. In two cases he discovered urinary constituents—in one urea and in the other uric acid. As regarded treatment, he observed that if he was opposed to nephrectomy in permanent hydronephrosis, he was still more so in the intermittent form, as one could entertain the hope that, after emptying the sac, further flexion of the ureter might be prevented by support and rest. The disease, however, might become pyonephrosis, and if the other side then became affected the patient was irretrievably lost. When, therefore, the symptoms were grave, fear of operation should not deter one from acting. Excision of the kidney should not, however, be the first choice. There are two methods of treatment; one was the formation of a fistulous opening. One of his patients had had such a fistula for eight years, and was quite well otherwise. In a second case the fistula closed and the patient was free from her hydronephrosis. Hahn's proposal was to stitch the sac as high in the abdomen as possible. A third method was put into practice by two of his patients. By lying in a suitable position, or by kneading, they succeeded in completely emptying the sac into the bladder, so that after passing all the urine they were able to do, by pressure on the tumor they were able to force another like into the bladder.

DR. SCOBY, of Brussels, to whom had been awarded the prize, offered by the Royal Academy of Medicine of Belgium, for the best essay on the dietetic treatment of disease, died a few days before the announcement of his good fortune.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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MEDICAL PROSPECTS AND BRITISH WAILS.

THERE are medical pessimists enough and to spare in our country. They are the ones who never weary of looking upon the dark side of all that pertains to the American medical profession, often forgetting that where there are deep shadows there must needs be bright light somewhere. It may afford these malcontents some satisfaction to know that "Old England," too, is by no means without its quota of dissatisfied, disappointed, and disturbed ones.

Indeed, if one has a taste for dismal forebodings, complaints, and lamentations, the medical literature of the entire world will afford ample opportunity, just at present, to satisfy the keenest appetite in that direction.

Some recent British wails illustrate this phase of professional life rather better than anything that has lately come to our notice. Under the caption of "The Protection of the Medical Profession," a correspondent of the *Lancet* writes that the profession ought to take steps to protect itself. He says that "the onus lies on the rank and file of the profession to take action, for if some joint and hearty action is not taken, we had better let things remain as they are, and be content to grin and bear it. I myself have had now over a quarter of a century's hard work in the profession, and I have only to look back and contrast the present state of the profession with its state twenty or thirty years ago to see how it has fallen in status. Acts are now unblushingly done which no gentleman would have dared to do in former times. Further, we see, owing to the unnecessary competition, the beneficent influence of sanitary science, and other causes, our emoluments gradually year by year getting less, while every day numbers beyond the real wants of the public are crowding into the profession, and so reducing incomes to a starvation point. I could bring forward endless grievances and abuses as they now exist, etc. If any reasonable number of the profession will help me, I will try to establish a league to bring about a more healthy state of affairs, so that we may happily become again a body respected and remunerated as we once were—a state of matters that will be for the joint benefit of us as a profession and of the public at large."

This writer is certainly very much in earnest, and the state of affairs pictured by him is not a pleasant one to contemplate, provided always that it represents the truth.

"Medicine as a Career for Young Men," is the title of an article by Mr. Crespi, published in *The Medical Press*, and if the author had called it "A Warning to Young Men not to become Doctors," the title would have conveyed his true meaning far better than the one under which he writes. He states that "the medical profession attracts, for obvious reasons, fewer of the very rich men who in considerable numbers enter the law, the church, and the army, nor does it obtain nearly so many men of good family and superior education, the latter shown by a distinguished academical career, as the bar and the church, though, at the same time, a large proportion of doctors have been decently and respectably born and educated."

He then shows all the difficulties in the way of success for the young practitioner. For example, he takes the "most favorable, though necessarily a small class, those young men who, after a long, costly, and successful curriculum, have obtained the best diplomas, and may also possess such academic distinction that a brilliant career seems to be before them. Unfortunately, with the constant improvement in the education and attainments of the rank and file of the profession, there is less demand for consultants than formerly; the provincial towns of the second and third class do not offer the field they once did, and a well-established professional reputation is more than ever essential. For consultants a brilliant reputation is needed, and without it little can be done. How is the young physician or surgeon of twenty-five or twenty-six to make that reputation which will alone bring him well-to-do clients? If he aims high, his chances of failure are many, and without the possession of money it is an absolute impossibility that he can help failing. He gets, we will suppose, some honorary hospital appointment—London or provincial—and determines to work hard and to achieve success. He cannot advertise, the public does not know him, and his own profession will not help him. He must live in good style, among his equals, and take only large fees. His success is thus extremely doubtful, and though an uphill fight of twenty years might in some cases lead to a flourishing position and a good income, many men fail to achieve success, do what they will, and not a few die dispirited." He has "known men of great ability who had to fill house-surgeoncies, and to pick up a miserable living from writing, tuition, or, indeed, from anything for the first dozen years, until they could get some valuable stepping-stone or scrape together money to pull on for a few years."

In *The British Medical Journal*, *The Provincial Medical Journal*, in a word, in all the leading English journals similar complaints occur again and again. And here, finally, is what the pungent pen of "Peripateticus," in *The Hospital Gazette*, has to say on the occasion of the recent opening of the London winter session, as regards the prospects of the British medical career: "I should be only too pleased on the present occasion to congratulate the hundreds of new students who will read these notes to-day on having chosen medicine as a profession could I honestly do so, but I regret to say that I cannot. Only a few years ago to possess a medical qualification was to command respect, position, and most probably wealth. In a few years all has changed. The profession is frightfully over-crowded, and it would not be exaggeration were

l to say that there are now hundreds of well-qualified and able doctors almost reduced to beggary. Twelve or fourteen years ago sixpenny dispensaries were known only to the lowest costermonger districts of the metropolis. Now they swarm all over London, and seem to thrive well even in the most aristocratic parts of the West End. Consequently doctors who conduct their practices on the old lines find their incomes falling off, and many are in dire straits."

Surely our British confrères are in no enviable position, if all these complaints are well-founded. But we venture to believe that the picture has been overdrawn. Hard work is necessary nowadays if success is to be obtained in any profession, but when energy is coupled with the requisite ability the outcome should not be doubtful. Dunces, idlers, and even those handicapped by some physical weakness, are certainly ill-advised to choose the medical profession for their life-work. But the absence of the necessary qualifications to make a prospectively useful physician ought to be apparent before the termination of the medical curriculum.

Moreover, we cannot help believing that the English writers quoted above have taken a rather one-sided view of what constitutes "success," making it tantamount to growing rich by the practice of medicine.

For their benefit we may be permitted to reproduce a few sentences from a recent address by Dr. Joy Jeffries (*The Boston Medical and Surgical Journal*). He very aptly points out that, "it is useless for us to contend with trade or business, either in earning a living or in the accumulation of money. Our profession is most essentially not a trade. Those in it who attempt to make it so but lower themselves to the level of trade, or simply money-making. Our calling belongs to that department of man's work recognized as scientific, or knowledge-seeking. We are simply men of science, that is, men of knowledge and its pursuit, the attainment of which is to benefit other people primarily. Now, the world over, men who give themselves up to the pursuit of knowledge have been considered as worthy of only so much of this world's goods as will simply keep them bodily in a condition to work with their brains and hands in science seeking."

And continuing, he says that "the young man in this country who wants to go into medical trade, thinks he has only to learn a little and get his diploma as he would fit up a grocery shop. The community thinks so, too. The so-called medical colleges scattered over the country are ready to help him for the fees he can scrape together to pay them. This tradesman opens his shop for custom, and the world looks upon and patronizes it like any other shop. But in medicine, as in all the true professions, work but commences with the responsibility of occupation, and never ceases while that lasts. Better for a man if it lasts through his life."

THE SURGICAL ASPECTS OF DIABETES.

THE question of the propriety of surgical operations upon patients suffering from diabetes has received considerable attention of late years, yet it is by no means to be regarded as closed. It is known that diabetics are very prone to septic infection, and it was at one time thought that this was of a specific character, due possibly to the presence in the blood of a peculiar poison. It has been shown, however, that this view is erroneous, and that patients of this class are more liable to suffer from septic infection simply because the secretions are so altered as to offer a favorable soil for the lodgement and growth of the specific micro-organisms. On the strength of this theory it has been asserted that operations upon individuals with glycosuria are no more likely to be attended with unfavorable results, provided strict antiseptic precautions are taken, than are operations upon non-diabetics. That this confidence is not justified by facts, must, however, be admitted, notwithstanding the reports appearing from time to time of successful results following major operations in patients of this class.

An instructive case is reported by Dr. Alfred Hoffa, in the *Münchener Medicinische Wochenschrift*, No. 51, 1888, which would seem to convey the warning that it is unsafe to operate, not only on those whose urine contains sugar, but also on those who have been apparently cured of their trouble. The patient was a man, sixty years of age, who had suffered for some years from diabetes and albuminuria. He had been treated at Carlsbad, and for the past two years had passed no sugar in his urine although there was still a trace of albumin. He consulted the reporter on account of a cancer of the rectum. Examination of the urine at this time showed not a trace of sugar and but very little albumin. As the patient's general condition was excellent an operation was advised, and the new growth was removed. The immediate results of the operation were good, the patient recovered promptly from the anæsthesia, he had a full and strong pulse and no fever, the wound behaved well and there was at no time any sign of septic infection.

Despite these apparently favorable conditions, however, the patient did not do well. An examination of the urine, drawn by catheter on the evening following the operation showed, to the author's surprise, 2.4 per cent. of sugar. During the night the patient was very restless and seemed to be suffering from iodoform-poisoning. The next morning the sugar was again absent from the urine. The iodoform dressing was removed and sublimate gauze substituted. During the three following days the urine contained considerable iodine, but no sugar, and the patient seemed in a fair way to recover. At the end of this time, however, as the iodine began to disappear the sugar returned. The man soon after this became comatose and died.

There are two interesting points in this case. The first is that to which we have already alluded, namely, the reappearance of sugar in the urine immediately after the operation, although there had been no traces of it for the two years preceding. Whether it was due to the effects of the anæsthetic or to those of the operation might, perhaps, be a subject for discussion, but it is altogether probable that the operation, rather than the anæsthetic, was the exciting cause, and, in either event, since the anæsthetic almost necessarily accompanies the operation, the case illustrates the danger of performing an operation of any magnitude upon the subjects of diabetes, even after a so-called cure has been effected.

The second point worthy of mention is the apparent influence of the iodoform upon the excretion of sugar.

Immediately after the operation the urine contained sugar in considerable amount, but coincident with the symptoms of iodoform poisoning the excretion of sugar ceased, and began again only as the effects of the iodoform gradually subsided. Moleschott has recommended the drug as a most efficient remedy in diabetes, and Dr. Hoffa's case would seem to confirm this opinion. It is rather to be regretted that the author did not resume the iodoform dressing, in view of its favorable action upon the diabetes; but he states that he feared to do so lest he should kill his patient, a somewhat similar case, reported by Rinne two years ago, having terminated fatally from iodoform-poisoning.

A HEALTHY CITY IN AN UNSANITARY CONDITION.

It is rather late in the day to ask if sanitary measures really limit disease in populous cities, for the experience of mankind has emphatically answered that they do. Yet it is well to remember that a city can never be kept perfectly clean, and that probably we shall never be able to stamp out zymotic disease wholly, or absolutely to prevent epidemics by these means alone. However pure and clean a city or a community may be, there is always a chance for some focus of infection to remain for a time undiscovered, and for the germs of disease to be scattered. On the other hand, a city may be in a most foul condition, every sanitary law seeming to be grossly violated, yet the death-rate is not large, and epidemics visit it no more frequently than they do other cleaner, and one would suppose therefore more healthful, communities.

An example of this is furnished by the city of Canton, where the first effort in the direction of sanitation, as the term is understood by western nations, has yet to be made. A writer in the *China Medical Missionary Journal* draws anything but an inviting picture of the city. It has, he says, an estimated population of 1,500,000, occupying an area of four and a half square miles. There are several canals running through the city, which are the receptacles for all sorts of offal and filth, fecal matter excepted, and at low tide their bottoms present miles of decomposing animal and vegetable matter. There are no drains in Canton, but in most of the streets are ditches about two feet wide and deep, loosely walled up with brick and covered with stone slabs. The streets are nearly level, and thus there is barely any fall to carry off the water. These ditches are seldom cleaned out, and are usually choked with refuse from the street and houses. On the sides of many of the streets are also uncovered ditches filled with stagnant water and filth. Either in the courtyard or in the rear of each house is a cess-pool, which is rarely cleaned out, and is usually in the same condition as the street ditches just described. The greater part of the water-supply "is derived from wells, which are from four to fifteen feet deep, and, of course, contain nothing but surface-water. A great part of this surface-water is the refuse-water which has been used by the million and a half people occupying four and one-half square miles. It percolates through the filth of the sinks and ditches, and then through soil which has been saturated for centuries with animal, vegetable, and saline deposits."

There is one good feature in respect to these cesspools and ditches, and that is that they receive no human excrement. Owing to the agricultural necessities of the people urine and fæces have a market value and are carefully saved and sold for manure. This, doubtless, is an important factor in the reputed healthfulness of the city. The writer above referred to has resided for more than thirty years in Canton, and he asserts that the city is not more unhealthy or more subject to epidemics than western cities generally. Statistics of mortality are, of course, wanting, so that it is not possible to speak with accuracy, yet a medical man, after a residence and practice of a quarter of a century in a city is in a position to judge with tolerable correctness of the general mortality-rate among its inhabitants, and of the extent to which it suffers from epidemics of disease. Epidemics, of course, prevail at times, but not in more violent forms than in the cities of Europe and America.

There are three principal factors at work in preventing Canton from being the pest-hole which it ought to be in the absence of any regard for sanitary matters. The first of these is that above mentioned, that little or no contamination of the soil by human excrement occurs. The second is that the people pass an active existence, and, the weather being warm, live for the most part with open doors and windows. The third, and most important, is that all the water that is drank is taken in the form of tea, and is consequently boiled, and the food is also, as a rule, thoroughly cooked.

News of the Week.

One Good Turn Deserves Another.—If the *British Medical Journal* is compelled by its council to apologize to Von Bergmann for publishing the Emperor Frederick's script, "Bergmann ill-treated," one naturally wonders if the German physicians who wrote their report attacking Mackenzie should not also apologize. It appears to the impartial observer that both publications were unwise and indiscreet.

We learn from the *Denver Medical Times* that a physician, Dr. H. Fremey, has been sent by the French government to Colorado to study its climate.

Regulating Veterinary Medicine in Pennsylvania.—A committee of well-known practitioners of veterinary medicine in Philadelphia and other parts of Pennsylvania has recently drawn up an address to the Legislature, recommending to its attention the importance of adopting some measure to regulate the practice of veterinary medicine in the State. The address recites the value of the cattle in Pennsylvania, which is put at about one hundred and twenty-five million dollars. In addition to this, the committee dwells upon the danger of communication of tuberculosis from animals to man.—*Medical and Surgical Reporter.*

The Annual Address of the Bellevue Hospital Alumni Association will be delivered this year by Professor William Osler, of Johns Hopkins University.

The Lights and Shadows of medical education in the State of Colorado are being shown up in the official organ of the County and Town of Boulder, where is located the Medical Department of the University of Colorado. One of the professors in this institution, a Dr. Mayfield, has been asked to resign because he secured too frequent and

favorable mention of his cases in the local papers, and in general disseminated too actively the knowledge of his peculiar skill and usefulness by means of the press. The paper which contains an advertisement of the ex-professor's infirmary for chronic diseases contains a counter charge by him against the Faculty of the Medical School. These gentlemen, says Dr. Mayfield, have been publicly recommending an indecent book called "Maiden Hood and Woman Hood." From the typography one would think that this was only some innocent work on millinery; but the context shows it to be physiological.

THE LANCET MEDICAL FUND.—The proprietors of *The Lancet* propose to set apart annually the sum of at least $1,500 to be used for the pecuniary assistance in emergencies of medical men or of their widows, orphans, or dependent relatives.

CALOMEL AS A DIURETIC acts best, according to Dr. Stritzig, in cardiac dropsy.

A NEW INSANE ASYLUM.—The Vermont Legislature has appropriated $100,000 for the building of a new Insane Asylum.

DR. E. B. BRANDT, of Mechanicsburg, Penn., died on January 19th. He graduated at Jefferson College in Philadelphia in 1855, and was sixty years of age.

VASSAR HOSPITAL.—The management of this hospital, at Poughkeepsie, N. Y., is severely critisised by Dr. Porteous of that place. "There are," he says, "never more than eight patients in the institution, which has a staff of thirteen physicians and surgeons." He adds: "It is easier to get a patient into a hospital in New York City, where he or she does not belong, than it is to get anybody in at Vassar Hospital." We trust that this statement is made under a misapprehension. There is no better equipped hospital of its size in the State and none better fitted for its special work.

THE BUM'S MIXTURE (*Mistura Errabundi*) has long been a favorite remedy at Bellevue Hospital for cases of recurrent indolence, and the undue attachment of healthful bodies to hospital wards. The New York Hospital claims to have something superior in the same line, which is called "The Undertaker's Revenge," and is an appetizing combination of copaiva, castor, ether, quinine, etc.

THE DENGUE NOT AT ST. AUGUSTINE.—Dr. A. Anderson, of St. Augustine, Fla., writes that the report that dengue prevails in St. Augustine is not true. A few cases were observed in September and October, but there are none now.

MR. JOHN BRIGHT, whose illness has been so earnestly watched and widely heralded, is in fact suffering from Bright's disease, complicated with diabetes. He is being attended by a homœopathic physician, who, with the help of good nursing, is steering him along between the Scylla of glycosuria and the Charybdis of albuminuria.

SAINT BARTHOLOMEW'S HOSPITAL AND DISPENSARY.—This institution was incorporated in December, 1888, for the free treatment of the diseases of the genito-urinary organs, both venereal and non-venereal, and of the skin. The President of the Board of Governors is Dr. George A. Peters. The members of the Consulting Staff are Drs. George H. Fox, Charles MacBurney, and George A. Peters. The Visiting Surgeons on the Genito-urinary service are Drs. C. T. Adams, E. B. Bronson, F. T. Brown, W. B. Clark, J. A. Fordyce, and F. J. Leviseur. The Dermatologists are Drs. G. T. Jackson, P. A. Morrow, and C. C. Ransom. These names are well known to the medical public, and of themselves are sufficient to give character to the hospital. An excellent site has been found at 84 Carmine Street, and the dispensary will open for patients about the middle of January. The idea of a hospital of this sort is not new, but until now it has lacked encouragement from the public. While there is a great deal of medical advice given gratis to the people of this city, the large class of venereal diseases is recognized in but few of the dispensaries, and only in Charity Hospital is there any provision for their special care.

DR. FRANK P. FOSTER.—We are most happy to learn that our esteemed colleague, Dr. Frank P. Foster, editor of *The New York Medical Journal*, is convalescing from his recent severe and critical illness. His numerous friends will rejoice with his family and unite in wishing him a speedy return to his former health and usefulness.

THE NEXT MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The meeting of the State Medical Society will be held February 5th, 6th, and 7th. It is the intention of the majority of the delegation to go to Albany on February 4th, at 3.30 P.M. Certificates will be sent to members and delegates of the New York State Medical Society, which can be exchanged for tickets at reduced rates, at the ticket office of the Hudson River Railroad, Grand Central Depot. The commutation rate to Albany and return, is $4.65 cents, against $6.20 cents, the regular fare. The delegation will have a drawing-room car for their exclusive use. Those who desire seats reserved should notify the Secretary, Dr. Clarence C. Rice, 115 East Eighteenth Street, at once.

MONEY FOR STATE SANITATIONS.—Illinois stands third in the list of States, when arranged in the order of the amounts appropriated for sanitary matters. Massachusetts leads with over $100,000, Texas following with $60,000, and Illinois coming to the front with a total of $49,000, including the emergency fund.—*Sanitary News.*

DRAKE'S PHARMACEUTICAL JOKE.—It is said that Drake, when the ships of the Armada turned their tails, sent to Elizabeth the word "Cantharides"—that is, "The Spanish fly."

SIR WILLIAM GULL has had another slight apopletic stroke, from which he is recovering.

AN OLD REMEDY DOOMED.—Spirits of nitrous ether is a drug that has become a household remedy; and as it is harmless always and somewhat helpful at times, its domestication in the family medicine-chest meets approval. The drug is, however, uncertain in composition and effect, its virtues depending, it is believed, chiefly upon its nitrite. A pure solution of ethyl nitrite has been found by Professor Leech, of London, to have exactly the same effect as the spirits when given in equivalent doses. Professor Leech is, therefore, of opinion that since a fairly stable solution of pure ethyl nitrite is now available, the formula for its preparation should be included in the "Pharmacopœia," and that the time-honored spiritus ætheris nitrosi should disappear from the list of official remedies.

Dr. Charles Osterlin, the discoverer of natural gas in Findlay, O., and a well-known physician, died there on January 18th from paralysis, aged eighty-two years.

The Philadelphia Polyclinic has established a special course in ophthalmology, to extend over three months, and embrace systematic didactic instruction and quizzing, with three hours of clinical work daily.

An Enemy of White Bread.—Mr. T. R. Allinson, L.R.C.P., has been living for a month on whole meal and distilled water, his purpose being to show that whole meal is vastly superior to white flour, which latter, he thinks, is almost as great a curse to the country as the liquor traffic. Mr. Allinson should now live for a month on white flour and distilled water; and let us know how he comes out.

A Medical License Law in Pennsylvania.—A bill has been introduced into the Pennsylvania Legislature, which provides for the appointment by the Governor of a State Board of Medical Examiners and Licensers, composed of nine members, from lists of names submitted by the incorporated State Medical Societies of this Commonwealth. The board is to examine all applicants for license to practise medicine or surgery.

A German Hospital for Brooklyn.—The German societies of Brooklyn, N. Y., interested in the establishment of a German hospital, have appropriated about ten thousand dollars from the regular society fund to the purchase of a hospital site in the Eighteenth Ward, near the routes of the Brooklyn Elevated and other city railroads. The twenty-seven parcels of land bought aggregate 50,000 feet or more.

"Protection for American Physicians."—*The Philadelphia Press*, commenting upon our editorial "Protection for American Physicians," adds some criticisms with which we heartily agree. The *Press* says: "It is not disputed that the ranks of physicians in this country are over-crowded. If, however, doctors need to be protected from incompetent Germans they need quite as much to be protected from incompetent Americans, who are turned out of the regular medical colleges by the wholesale, and are authorized by their diplomas to practise medicine with often an entirely inadequate preparation for their work. One diploma mill, we have in mind, graduates its young men after two terms, or a total attendance of six months. Competent doctors may or may not think they require protection from this class of practitioners, but it is certain that the public do. It matters not whether the physician comes from Germany or from Kentucky, the fact that he holds a diploma from some alleged medical college ought not of itself without further proof of fitness entitle him to practise his probable ignorance upon a suffering and defenceless humanity."

Medical Department of the University of Pennsylvania.—Dr. John Ashhurst, Jr., formerly Professor of Clinical Surgery, has been elected to the chair of General Surgery, vacated by the resignation of Dr. Agnew, and Dr. James Tyson, formerly Professor of Morbid Anatomy and General Pathology, has been appointed to the chair of Clinical Medicine, made vacant by the resignation of Dr. Osler. The title of Emeritus Professor of Surgery and Clinical Surgery was conferred on Dr. Agnew. It is reported that Dr. J. William White will be made Professor of Clinical Surgery, and Dr. John Guiteras Professor of General Pathology.

The Chicago Medical Society has completely exonerated Dr. Andrew J. Coey from the charge of willingness to produce abortion made against him by the Chicago *Times*.

The Royal College of Surgeons recently passed the following resolution by a vote of twenty-one to two: "The attention of the Council of the Royal College of Surgeons of England has been called to a volume published by Sir Morell Mackenzie, which bears the title, 'The Fatal Illness of Frederick the Noble,' and the Council consider it to be their duty to express their deep regret that any member of the College should have allowed himself to publish in such a manner the charges that are therein made against distinguished surgeons who were his coleagues in the case. The Council have not sufficient means of forming a conclusive judgment on the facts which are in dispute, but in their opinion no provocation, such as Sir Morell Mackenzie alleges, can justify this publication or the language employed in it."

The Cigarette Eye.—A New York oculist claims to have discovered a disease of the eye characterized by a dimness and a "film-like gathering" over the eye, which he traces directly to cigarette smoking. He calls it the "cigarette eye."—*Maryland Medical Journal.*

The Middleton Goldsmith Lecture for 1889 will be delivered before the New York Pathological Society, in the hall of the Academy of Medicine, on February 16th, at 8:30 P.M., by Reginald H. Fitz, M.D., Shattuck Professor of Pathology in the Harvard Medical School, Boston. The subject of the lecture will be "Acute Pancreatitis, with an Especial Consideration of Pancreatic Hemorrhage, Hemorrhagic Pancreatitis, and Subperitoneal Fat Necrosis."

Death of Passed Assistant Surgeon Wilson, United States Navy.—Passed Assistant Surgeon W. G. G. Wilson was found dead in his bed on the Receiving Ship St. Louis, at the League Island Navy Yard, January 23d. He was a native of Maryland, and thirty-five years of age. He was made Assistant Surgeon on December 1, 1876, and was promoted to his present place on July 6, 1880. Dr. Wilson's body was found by a servant who went to wake him. He had only been at League Island three weeks, having been transferred from Mare Island Navy Yard. For over a week past he has suffered from insomnia, and has been in the habit of taking small doses of bromide of potassium to induce sleep. On Tuesday evening he procured a bottle of chloral containing two hundred and fifty grains from the ship's storeroom, and when discovered Wednerday morning in his stateroom the vial contained about eighty-five grains of the drug.

Death of an Old Physician.—Dr. Amos Walker, the oldest physician in Pennsylvania, died in Bucks County on Monday, aged ninety-six. His ancestor in this country, John Paxton, the famous Quaker, settled in 1682 near the spot where Dr. Walker died. The deceased man was fifty two years of age when he graduated, in 1846, from the University of Pennsylvania, he having followed farming in Bucks County until that time. He was a cousin of General Winfield Scott, and of the Hon. Robert J. Walker.

Reviews and Notices of Books.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF MISSOURI, AT ITS THIRTY-FIRST ANNUAL SESSION, HELD AT KANSAS CITY, MO., APRIL 17, 1888.

THE volume before us is a valuable contribution to current medical literature, and contains interesting papers on several special subjects.

AN ILLUSTRATED ENCYCLOPÆDIC MEDICAL DICTIONARY: Being a Dictionary of the Technical Terms used by writers on Medicine and the Collateral Sciences, in the Latin, English, French, and German Languages. By FRANK P. FOSTER, M.D., Editor of the New York *Medical Journal*, with the collaboration of William C. Ayres, M.D., New Orleans; Edward B. Bronson, M.D., New York; Charles Stedman Bull, M.D., New York; Henry C. Coe, M.D, M.R.C.S., L.R.C.P., New York; Andrew F. Currier, M.D., New York; Alexander Duane, M.D., New York; Simon H. Gage, Ithaca, N. Y.; Henry J. Garrigues, M.D., New York; Charles B. Kelsey, M.D., New York; Russel H. Nevins, M.D., New York; Burt G. Wilder, M.D., Ithaca, N. Y. Vol. I. With Illustrations. New York: D. Appleton & Co. 1888.

READERS of medical literature have for a long time been painfully alive to the need of a good dictionary. By this we mean not merely one in which the meaning of the more commonly employed terms may be found, but one in which all the words, common and uncommon, are defined, and to which the reader can turn, with every confidence, for the correct pronunciation and etymology of the medical terms in general or occasional use. This want has now been filled, and filled in a manner that defies all criticism, by the work before us. Size is not greatness, but in a work like this, in which every effort has been made to economize space, the size is at least an indication of completeness; and when we find that the first volume comprises seven hundred and fifty-two pages, yet carries the vocabulary from A to Cacos only, some idea may be formed of the comprehensiveness of the work. The pronunciation of each word is clearly indicated by means of a simple and easily understood scheme printed at the foot of each page. The pronunciation of the Latin terms is given according to both the English and the Roman method. The author has, we think, done wisely in introducing the latter method, for most college-students at the present day are learning to pronounce in that way, and it will not be many years, we hope, before the barbarous and absurd English method will be no longer heard in medical schools or societies.

The vocabulary embraces not only all the strictly medical terms now in use, and that have ever been current in the medical literature of English-speaking countries, but also all the technical terms used by writers on physics, botany, zoölogy, and chemistry which have any medical bearing. The names of chemical substances are inserted very liberally, in view of the fact that materia medica is constantly receiving additions of substances, such as acetanilide, which were before known only to chemists. As the title indicates, this is a French and German, as well as an English, dictionary. Anyone who has occasion to read works in either of these languages, especially the German, will appreciate the value of this. Illustrations have been introduced quite freely in order to render more clear the definition of the words, but they have been used with rare judgment, and add greatly to the value of the work. They refer chiefly to anatomical and botanical subjects, and really economize space by doing away with the necessity of lengthy descriptions, showing at a glance what would take many lines of text to explain clearly.

A work of this kind cannot be reviewed, it can only be criticised. But criticism, as generally understood, implies unfavorable criticism, and this cannot be applied to Dr. Foster's dictionary. It is a work that stands unrivalled in any country, and America may well be proud of it. For comprehensiveness and scientific accuracy it can be compared only to "Murray's Dictionary of the English Language" now in course of publication, and we doubt whether even that stupendous work can equal the one before us in its own peculiar sphere. The author is to be congratulated upon having so nearly completed a work which will be the standard authority in medical terminology for many years to come.

THE EXTRA PHARMACOPŒIA, with the Additions introduced into the British Pharmacopœia, 1885. By WILLIAM MARTINDALE, F.C.S., late Examiner of the Pharmaceutical Society, and late Teacher of Pharmacy and Demonstrator of Materia Medica at University College. MEDICAL REFERENCES, and a Therapeutic Index of Diseases and Symptoms, by W. WYNN WESTCOTT, M.B. Lond., Deputy Coroner for Central Middlesex. Fifth edition. London: H. K. Lewis. 1888.

THE fifth edition of this unpretentious, but very useful, therapeutic hand-book contains a number of new preparations that have been introduced into English practice during the three years that have elapsed since the publication of the fourth edition. The book is neatly printed and of convenient size, and the arrangement of the matter is such as to greatly facilitate ready reference. It ought to be very useful to busy men who desire to keep well informed concerning the new therapeutic remedies, many of which have already earned for themselves a permanent place in the Pharmacopœia.

NATURE'S HYGIENE: A Systematic Manual of Natural Hygiene, containing a Detailed Account of the Chemistry and Hygiene of Eucalyptus, Pine, and Camphor Forests, and Industries connected therewith. By C. T. KINGZETT, F.I.C., F.C.S., Past Vice-President Society of Public Analysts; Past Member of Council Institute of Chemistry of Great Britain and Ireland; Hon. Member Société Française d'Hygiène; Author of "The History, Products, and Processes of the Alkali Trade;" and "Animal Chemistry; or, The Relations of Chemistry to Physiology and Pathology." Third edition. London: Baillière, Tindall & Cox. 1888.

IN this book the author treats, in a popular way, of the sanitary properties of the eucalyptus and pine trees, and seeks to show that their favorable influence is due to a process of slow oxidation of the impurities and morbific agents present in the atmosphere. The work is very readable, for the author writes in a pleasant style, and the chapters are so arranged that each one forms a complete essay in itself, so that they need not be read in order, but can be picked out and studied here and there at the reader's convenience or desire. The book contains also considerable information on subjects not strictly scientific, as, for example, the collection of turpentine from the pine trees in our Southern forests.

THE PASSAGE OF AIR AND FÆCES FROM THE URETHRA. By HARRISON CRIPPS, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital; late Surgeon to the Great Northern Hospital; author of "Diseases of the Rectum and Anus," and Jacksonian Prize Essay on "Rectal Cancer." London: J. & A. Churchill. 1888.

THIS monograph was written to record the results of the author's investigation into the cause of this rare condition, which he was led to make after meeting with two cases in his own practice. He had supposed that the phenomenon was indicative of malignant diseases, but his studies led him to the opposite conclusion. He has collected the records of sixty-three cases, only nine of which were cancerous. Two were traumatic, forty-five were due to abscess, and in seven the cause was not stated. As regards treatment, Mr. Cripps advocates colotomy as offering the best chance for the healing of the fistulous tract.

ON THE HISTORY, NATURE, AND TREATMENT OF SYPHILIS. By J. L. MILTON, Senior Surgeon to St. John's Hospital for Diseases of the Skin. London: Henry Renshaw. 1887.

THIS is a very exhaustive treatise on syphilis, written by a man who has decided views on the subject, but who is not afraid to set forth clearly and fully the opinions of others at variance with his own. The author writes pleasantly and forcibly, and a perusal of the work will repay the reader, even though he may not find himself in the end converted by the arguments here set forth.

CONTRIBUTIONS TO CLINICAL AND PRACTICAL MEDICINE. By A. T. H. WATERS, M.D., Fellow of the Royal College of Physicians of London; Consulting Physician to the Liverpool Royal Infirmary; late Professor of Medicine in University College, Liverpool, and formerly Physician to the Liverpool Northern Hospital. London: J. & A. Churchill. 1887.

THIS is a collection of essays and lectures on subjects relating to pulmonary and pleural affections. In Chapter I. the question of temperature in phthisis and some other diseases is discussed, and the importance of thermometric observations in these affections insisted upon. Other chapters treat of pneumonia, cancer of the lungs, diseases of the bronchial tubes, tapping for pleuritic effusions, Alpine winter climates, etc. The book is readable, and contains many practical points that are worthy of thought and study.

LES STATIONS D'EAUX MINÉRALES DU CENTRE DE LA FRANCE. La Caravane Hydrologique de Septembre 1887. Par MM. DR. P. DE PIETRA SANTA et A. JOLTRAIN, Président et Secrétaire de l'Excursion. Paris: Georges Carré. 1888.

THIS is an account of an excursion made in September, 1887, to several of the mineral springs of Central France. The first part treats in general of the therapeutic value of climatology and hydrotherapy; the second part contains an account of the journey; and the third part consists of the lectures delivered at each stopping-place before the physicians taking part in the excursion. The book contains much valuable information concerning many of the most important of the French mineral springs, including La Bourboule, Royat, Saint Honoré, and Vichy.

BULLETINS DE LA SOCIÉTÉ ANATOMIQUE DE PARIS. LXIIe Année (1887), 5me Série, Tome I. Rédigés par MM. DARIER et MARFAN, Secrétaires. Paris: G. Steinheil. 1887.

THIS volume comprises the transactions of the Anatomical Society of Paris for the year 1887. It contains a number of interesting reports on the most varied topics relating to pathology and human anatomy, many of which are illustrated. A fairly complete index adds to the value of the book as a work of reference.

THE MEDICAL AND SURGICAL HISTORY OF THE WAR OF THE REBELLION. Part III., vol. i. Medical History. Prepared under the direction of the Surgeon-General United States Army, by CHARLES SMART, Major and Surgeon, U.S.A. Washington: Government Printing Office.

THE third part of the series of Medical History of the War of the Rebellion fully sustains the reputation of the preceding volumes; in fact, considering the subjects treated it excels either of the other two in practical value. The subject of camp fevers forms the bulk of the present volume, and the treatment of this class of diseases in all their phases is the most exhaustive of its kind in any language. It is impossible to indicate, even in outline, the immense amount of material which has been worked over and arranged by the painstaking and indefatigable editor. The volume, ponderous as it is, is so full of valuable information, founded on accurate and exhaustive study, that it is impossible to do more than refer to the fact as indicating its great value to every army surgeon and every general practitioner throughout the land. The admirable illustrations are in themselves works of art aside from the accurate representations of pathological conditions. This was what might have been expected, considering the fact that they were prepared by the late lamented Dr. Woodward.

TRAITÉ PRATIQUE ET CLINIQUE D'HYDROTHÉRAPIE. Par E. DUVAL, Médecin en Chef et Fondateur de l'Institut Hydrothérapique de l'Arc-de-Triomphe; Ex-Président de la Société de Thérapeutique Expérimentale de France; Officier d'Académie, etc. Avec Figures. Préface par M. le Professeur Peter. Paris: J. B. Baillière et Fils. 1888.

THIS is a very practical treatise on the subject of hydrotherapy, describing in detail the modes of application and the appliances used, as well as the indications for the employment of hydrotherapy. The author, who is an enthusiast on the subject, seeks to raise this branch of therapeutics to the level of an exact science, and shows that when employed in conjunction with other remedies it is capable of producing excellent results in the treatment of many diseases.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U.S.A. Authors and Subjects. Vol. ix. Medicine–Nywelt. Washington: Government Printing Office. 1888.

THIS volume includes 13,151 author titles, and represents 6,834 volumes, 12,818 pamphlets, and 29,120 titles of articles in periodicals. It has been prepared under the direction of Dr. John S. Billings, as have been the former volumes.

PRESCRIPTION WRITING. Designed for the Use of Medical Students who have never studied Latin. By FREDERICK HENRY GERRISH, A.M., M.D., Professor of Anatomy, and formerly Professor of Materia Medica and Therapeutics, in Bowdoin College; Surgeon to the Maine General Hospital, President of the Maine State Board of Health, President of the American Academy of Medicine, etc. Seventh and revised edition. Portland, Me.: Loring, Short & Harmon. 1888.

THIS is a well-arranged little book, and the rules of the Latin grammar, as far as they are needed in prescription writing, are clearly stated. It is one of the best books on prescription writing that we have seen, and the fact that it is very short is not the least of its merits, for we have some doubts concerning the practical utility of works of this sort that are intended to supply certain deficiencies, which of themselves should deter one from entering upon a life of continuous scientific investigation such as is, or should be, a physician's.

CHEMICAL EXPERIMENTS FOR MEDICAL STUDENTS; ARRANGED AFTER BEILSTEIN. By W. S. CHRISTOPHER, M.D., Demonstrator of Chemistry, Medical College of Ohio, Cincinnati. Cincinnati: Robert Clarke & Co. 1888.

AT the present day, when there is such an awakening to the necessity of a more thorough medical education, it is not unreasonable to hope that all our colleges will soon see the need of giving students some practical instruction in chemistry. And when this time comes we know of no work that will be found better adapted as a guide in such study than this. The experiments are simple, yet ample, to initiate the student into the principles of chemical analysis, and are arranged in a progressive series, so that the novice will not be discouraged by meeting with difficulties at the outset. A number of blank pages are bound up with the book to serve for notes and additional experiments.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, January 17, 1889.

ABRAHAM JACOBI, M.D., PRESIDENT, IN THE CHAIR.

THE PRESIDENT introduced as guests Dr. Paul Gibier, of Paris, and Dr. Louis Bauer, of St. Louis.

YELLOW FEVER; EXPERIMENTAL RESEARCHES INSTITUTED IN FLORIDA UNDER DIRECTION OF THE FRENCH REPUBLIC.

DR. PAUL GIBIER read the paper under a somewhat different title from that on the cards of announcement: "Yellow fever; experimental researches on its etiology."

At the beginning of 1888 he had read a paper containing the results of researches he had undertaken on yellow fever, started in November, 1887. Since that time he had spoken of his work on the subject before the Academy of Medicine in Paris. In September, 1888, in consequence of these studies, the French government, which four times before had honored him with its confidence for other investigations, gave him the mission to go to Florida and study yellow fever, which was prevailing there at that time.

When he arrived at Jacksonville the epidemic had begun to decline, but he was able to study several cases of undoubted yellow fever. Before reciting those cases the author considered the question, which was one of doubt in the minds of some physicians, whether this was or was not really an epidemic of yellow fever, and the conclusion which he arrived at was, that while a number of deaths were due to the fevers prevalent in the country, and that such fevers caused some cases of yellow fever to run a modified course, yet the epidemic was one of genuine yellow fever. He saw some cases which were absolutely as characteristic, judged by the symptoms and pathological lesions, as any he had seen at Havana or elsewhere. He had opportunity to make bacteriological observations in comparatively few cases, but these were confirmatory to a degree of the more numerous observations made in Havana, in 1888.

The substances which had been planted in cultures had been taken with every precaution. While it was not impossible that the micro-organisms which developed in the fluids experimented upon during the culture process were introduced in the necessary manipulations, yet, this uncertainty, he thought, did not exist in the case of the solid media. While he admitted, as he had done in preceding publications, the introduction of the micro-organisms into the hollow viscera as possible, owing to alterations in the mucous membrane, yet this possibility seemed excluded in the case of the liver, spleen, and kidneys. Dr. Gibier gave the results of cultures made in about six cases at Jacksonville; in one case, however, the disease was not yellow fever. The fifth case was that of a light mulatto, aged thirty-five, who died after four days' illness, with undoubted symptoms and lesions of yellow fever. The liver was "nutmeg," the kidneys congested, the stomach and bowels contained a large amount of black liquid, the contents of the stomach being acid, of the small intestine decidedly alkaline, of the large intestine neutral. Cultures were made of the blood, kidneys, liver, spleen, and intestinal contents. The blood was sterile. The kidneys, spleen, and liver contained some microbes of decomposition, and it was to be remarked that the autopsy was made eight hours after death, the temperature was high, and the conditions were very favorable for the early development of the microbes of decomposition. The interest in the case centred in the fact that the intestinal fluids contained the microbe which he had isolated in Havana, and believed to be the origin of yellow fever.

In this, the fifth, case alone did he find the particular bacillus which was present in certain cases examined at Havana. It was seen only in the contents of the intestine; the case had run rather a rapid course to a fatal termination on the fourth day. The black liquid in the intestines was plentiful, and of alkaline reaction (fluids of acid reaction destroyed this microbe). It was noticeable that the liquid cultures of this microbe resembled in character the black vomit; he could not assert, however, that this fact possessed any significance. The blood, liver, kidneys, and spleen had been found constantly free from the microbe.

The theory which Dr. Gibier had supported was, that yellow fever was an intestinal affection, and if that were true, it should be treated from the beginning by remedies directed to the intestinal tract, as by the use of such disinfectants as bichloride of mercury, naphthalin, and tannic acid. There were two objections to this theory which he would answer: 1, If yellow fever was an intestinal disease due to a micro-organism, why was this not found in all cases after death? 2, If this cause were admitted, how could one explain the albuminuria present?

In answer to the first question, he stated that after a micro-organism had saturated a culture-medium its growth stopped. And, if then another microbe were introduced it would replace the former. So it might be in the fluids of the intestine in yellow fever. As soon as he should have opportunity, it was his intention to examine the dejecta of patients, from the first day of the disease until the last, for proof of this view. He would not be surprised to find his microbe in some cases only during the first days of the disease. The alterations in the other organs during the course of the disease might be accounted for by the ptomaines generated by the microbe which entered and poisoned the blood. The poisons seemed to be especially plentiful in the radicles of the vena porta. As to the presence of albuminuria, he remarked that it was not unusual for it to be present in other affections, as typhoid fever, where the original lesion was in some other organ.

DR. STERNBERG had found the microbe described by Gibier in three cases, in which he had looked for it. It was Dr. Gibier's opinion that if yellow fever was a bacterial disease, it would not be impossible to confine it to the inhabitants of countries exposed to the epidemic.

DR. L. B. BULKLEY then read a paper (which will appear in THE MEDICAL RECORD hereafter), entitled

UNUSUAL METHODS OF ACQUIRING SYPHILIS, WITH REPORTS OF CASES.

DR. SAMUEL T. HUBBARD inquired of Dr. Bulkley, whether in his opinion syphilis could be conveyed to the nursing child through the milk. He was prompted to ask the question from having seen a case in which the infant acquired syphilis through the nurse, the latter, however, having no lesion at the time the infant contracted the disease.

DR. BULKLEY expressed the belief that the milk could not transmit syphilis.

THE PRESIDENT suggested, in explanation of Dr. Hubbard's case, that milk was not always the same. That from a healthy woman was a secretion composed mostly of transformed epithelium. Such milk would not transmit syphilis. When, however, the woman's health deteriorated, as in states of anæmia, the milk became largely a simple transudation from the blood, and was composed chiefly of blood-serum and its contents. Such milk might transmit syphilis.

SECTION IN SURGERY.

Stated Meeting, January 14, 1889.

ROBERT F. WEIR, M.D., CHAIRMAN.

ELECTION OF OFFICERS.

DR. ROBERT ABBE was elected chairman of the section for the ensuing year, and Dr. Charles A. Powers, secretary.

EXSTROPHY OF THE BLADDER; WOOD'S OPERATION.

DR. WILLIAM T. BULL presented a boy, about nine years of age, illustrating the results of Wood's operation

for extroversion of the bladder. The condition was a somewhat rare one, consisting in a congenital malformation, with the mucous membrane of the bladder exposed in the hypogastric region and the ureters opening externally. He first tried to destroy the mucous membrane of the bladder, and sew the ureters to the glans penis, but failed. Wood's operation was performed in August, and consisted in making three flaps, the central one being turned with the skin down, and the other two united in the middle line with their raw surface pointing downward. The raw surface, left from dissecting up the flaps, healed within eight weeks. The operation proved a success, resulting in a cutaneous surface taking the place of the mucous surface which previously had given rise to much discomfort from irritation. Of course, the capacity of the bladder as a reservoir had not been increased. He thought the case was worthy of presentation, as showing good results from an operation which was not frequently performed. The boy had been wearing an apparatus for collecting the urine, and although it had answered the purpose well, it had to be laid aside on account of the irritation which it had caused by pressure.

THE CHAIRMAN had seen four cases of exstrophy of the bladder, but had been in doubt whether he could benefit his patients much by any of the procedures which had been suggested or tried. Some years ago, he saw a patient of Dr. Van Buren wearing a rubber cover and reservoir, which made him quite free from the ill effects of continual drain of urine from the mouths of the ureters.

DR. L. B. BANGS had seen two or three cases of exstrophy of the bladder, but had not thought it advisable to operate.

DR. DE GARMO presented photographs of a case which came under his care about three years ago, that of a married woman who had borne one child. The labor was normal, but subsequently complete prolapsus of the uterus occurred. There was complete separation of the symphisis pubis. She was a marked sufferer from the constant irritation of the prolapsed uterus and exposed mucous surface of the bladder. Dr. De Garmo replaced and supported the uterus, and also protected the exposed bladder by an apparatus, consisting of a spring passed around the waist, a rubber pad between the thighs, a cup pessary for the uterus, and conducting the urine to a urinal strapped to the leg. The relief was very marked.

DR. J. B. BISSELL then presented a child with

CONGENITAL DEFORMITY OF BOTH KNEES,

which was first brought to Dr. Gibney's clinic in December, 1887, when seven weeks of age. The child was born at full term, normal labor, but breech presentation. When first seen, both tibiæ were luxated forward, there was considerable spasm in the great extensors of the thigh, the condyles of the femur projected into the popliteal space. The patellæ were small. The spasm of the quadratus femoris prevented any flexion of the knee, and held the leg extended fifteen degrees beyond the straight line. There were some deep creases about the joint. The ligaments were all relaxed except the ligamentum patellæ. Marked flexion at the knee was impossible, even under chloroform. At present the child could flex the legs without difficulty, but when it attempted to walk the knee refused support. The left knee showed a worse condition than the right.

UNUSUAL CONGENITAL SUBLUXATION OF THE KNEE-JOINT.

DR. L. H. SAYRE presented a baby whose left tibia, at birth, was luxated forward so that the toe rested upon the abdomen, and the leg projected forward, forming an angle of forty-five degrees with the thigh. There was no muscular spasm. By the aid of the hand the leg could be brought down to the straight line. The condyles of the femur were plainly felt in the popliteal space. The other leg was normal. Both were of about the same size and length. The deformity was gradually being overcome by a retention apparatus.

DR. V. P. GIBNEY read the description of a similar case by Dr. Taylor, of Texas. The boy, of about twelve, was then only able to balance himself on his legs, but in going about supported himself by both hands and feet. The legs were hyperextended upon the thighs, forming an angle on the left side of 120°, and on the right of 100°. They could by force be brought to a straight line. Motion in the knee was smooth and painless. The patellæ were small. The muscles of the leg were atrophied; there was some talipes equinus in the right foot.

Dr. Gibney remarked that he once had a boy under observation in whom he thought there was complete absence of the patella, but a rudimentary one was found later.

DR. WIENER presented plaster casts in two cases of deformity at the knee, children of the same parents. Immediately after birth both legs were extended upon the thighs nearly at a right angle. The labors had been normal. The patellæ were small.

DR. KETCH mentioned a case in which the subluxation at the knee had been mistaken for exaggerated knock-knee. Closer examination showed the dislocation of the femur backward into the popliteal space, and marked hyperextension of the leg. The child was then aged six years, but the mother had noticed the deformity when it first attempted to walk. There was marked relaxation of the ligaments. The joint could be easily manipulated except laterally.

DR. TAYLOR said he presented at the Northwestern Medical and Surgical Society almost a duplicate of the case presented by Dr. Bissell. The child was one of twins, was a breech presentation, and the thighs were flexed upon the abdomen and the legs hyperextended upon the thighs, and remained so for some time after delivery. The patellæ could not be felt. There had been marked mobility laterally at the knees, but the hyperextension and lateral mobility had been largely overcome by retaining apparatus. In other respects the child's health was good.

DR. A. JACOBI remarked that he had seen absence of the patella in but one case. It was supposed to have been found in another, but later a very small one was felt. He suggested that lack of sufficient liquor amnii, causing a cramped position of the child, might be the cause in some instances of hyperextension or hyperflexion of the limbs. It was not uncommon to see babies with marked flexion of the limbs for a long time after birth, and the same cause operating in a more marked degree might give rise to the malformation seen in the cases related this evening. When floating about freely during utero-gestation there was opportunity for the muscles and other tissues to obtain their normal development. He had observed in Dr. Bissell's case absence of the reflexes in the right lower extremity, which might point to a spinal affection.

CERVICO-THORACIC FISTULA.

DR. F. HÜBER presented the patient, a boy of six years. His trouble dated back to the latter part of July, 1887, when there was evidence of phlegmonous erysipelas in the right side of the neck. Symptoms pointing to an abscess developed, which was evacuated through an incision at the side of the sterno-cleido-mastoid. The patient improved, but afterward signs pointed to fluid in the left pleural cavity. An opening was made below the axilla and pus escaped. Injections made at this opening escaped through the one above the clavicle, and when made at the opening above, escaped through the incision into the pleural cavity. The temperature still remained up, the superior wound was enlarged, the finger introduced behind the sternum, and an abscess opened in the antero-mediastinal space. Eleven months later two ribs were resected posteriorly. This wound healed within three weeks. A few days afterward a prominence presented in the left cervical region. This was opened, and a large amount of pus escaped. A uterine sound was then passed

through from the cervical opening to the infra-axillary opening, and a strand of iodoform gauze was left in three weeks. A silk thread, passing from the upper wound down through the lower, was now being worn to prevent the former from closing. By moving this thread up and down a large amount of fluid was permitted to escape in November last. When the child was presented, the discharge was very slight, yet it was probable that further operative procedure would have to be resorted to. The lungs were well filled out; the general health had much improved the past year.

DR. HÜBER also presented a case of

PULMONARY ABSCESS IN A CHILD.

The boy was aged four years; was first seen by Dr. Hüber in October. He had been sick five weeks with what was called pleuro-pneumonia. During this time he presented high temperature, irregular chills, diarrhœa, and sweating—indications of a suppurative process. On the right side, anteriorly, he found flatness over the lung, with absence of vocal fremitus. On deep inspiration, there was distant bronchial breathing. His diagnosis was that of local pyæmia anteriorly. Dr. Jacobi suggested the possibility of intra-pulmonary abscess. An exploratory puncture revealed pus, but an incision on the upper border of the fourth rib into the pleural cavity failed. Further exploration, however, brought out about a drachm of pus, and a drainage-tube was introduced. Two days later about two ounces of pus were on the dressings. At present there escaped not more than two drachms in four days, and there had been general improvement. When small injections were made there was no cough; when larger ones were made spasmodic cough resulted, until what fluid had been injected into the bronchi had been expectorated. He supposed that in passing through the pleura the distance was half an inch. Some pneumonia had resulted from his punctures, but it had resolved satisfactorily.

AMPUTATION FOR CHARCOT'S JOINT DISEASE.

DR. LAYTON presented the patient, a man aged sixty, who entered Bellevue Hospital July, 1887. He had had gonorrhœa and chancroids. The last seventeen years he had had what he called chronic rheumatism, consisting of attacks of pain coming on at irregular intervals, and confined to the lower extremities. They were always relieved by counter-irritation and rest. Eight years before, he first noticed difficulty in balancing in the dark, and afterward was annoyed by tingling sensations in the feet. His nephew, a physician, diagnosticated locomotor ataxia. There was also some enlargement of the left knee. This went on enlarging, but he was able to walk without difficulty by the aid of a cane. In July, 1872, he had an attack of retention of urine. It was drawn by catheter, and since then there had been incontinence, and also slight incontinence of fæces. The day before admission to the hospital he got wet while fishing, and afterward found his left leg give way when he attempted to use it. At the hospital the left knee was found enormously distended with fluid. It disappeared under treatment, and then both femurs were found enlarged. Manipulation was not attended by pain. There was a distinctly grating sound in the knee, and the ligaments were destroyed. He remained in the hospital and enjoyed fair health. The fluid would return in the left knee from time to time, but disappeared under pressure. Finally, this treatment failed, and aspiration brought forth serum and a small amount of pus. The patient consented to amputation, and Dr. McBurney did Spence's operation. The dressing was removed at the end of the second week, when primary union was found to have taken place. Dr. Layton spoke favorably of this operation, which left the cicatrix back of the thigh, away from pressure by the artificial leg. The opposite knee was well, there were no symptoms of locomotor ataxia, and the patient was in much better condition than when he entered the hospital.

THE CHAIRMAN thought from limited experience that considerable advantage was gained in cases of this kind from excision of the knee-joint, provided amputation were not advisable or permitted.

DR. SYMES had observed that resection gave less favorable results in these cases than one would anticipate from a study of the pathological changes.

DR. L. BOLTON BANGS read a paper (see p. 85) entitled

ON SPASMODIC URETHRAL STRICTURE FROM ANAL FISSURE.

THE CHAIRMAN referred to a case of vaginismus, almost forbidding coition, which disappeared by treatment of an anal fistula.

ENLARGEMENT OF THE THYROID GLAND.

THE CHAIRMAN presented nine small tumors, separate portions of the enlarged thyroid, each of which was removed from a more or less distinct capsule. This method of removal presented certain advantages. It was important to leave a portion of the thyroid, since in Europe, where a much larger number of cases of goitre developed than here, it had been found that its entire extirpation was likely to be followed by myxœdema. It was not uncommon to find one or several cysts in the tumor.

DR. B. F. CURTIS had operated in a case which contained a cyst as large as an orange. It was "shelled out."

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, November 28, 1888.

W. P. NORTHRUP, M.D., PRESIDENT, IN THE CHAIR.

DR. RICHARD VAN SANTVOORD presented some specimens showing

PRIMARY TUBERCULOSIS OF THE GENITO-URINARY TRACT.

The patient, J. G——, had been under observation at intervals for about three and a half years, in the Randall's Island Hospital, his main trouble being supposed to be chronic diffuse nephritis. The urine was generally of low specific gravity, frequently below normal in quantity, and usually containing a moderate amount of albumin. Casts of various sorts were found from time to time. Within two years the epididymis, first of one side, and, after a short interval, of the other, became swollen, hard, and finally suppurated. A sinus also formed over the sacrum, discharging pus. The strength, meanwhile, failed gradually. For about six weeks, during the last summer, he was troubled with frequent micturition and his urine was observed to contain considerable pus. Under treatment the symptoms subsided and the cystitis was supposed to have been cured. Attention was drawn to his lungs only a few weeks before death, which occurred November 10, 1888.

The autopsy disclosed a very emaciated body, with a sinus over the sacrum leading into the right sacro-iliac synchondrosis, whose bony surfaces were rough and carious. The cartilage of the left fifth rib was softened and necrotic, and communicated with an abscess under the pectoral muscles. The pia mater was thickened, and a single small tubercle was found on the convexity of the left side of the cerebrum. The heart was pale and slightly atrophied. The lungs showed firm gray, tubercular clusters throughout, some dilatation of the bronchi, rather recent pneumonic consolidation of left lower lobe, old adhesions over right lung, and recent ones over left.

Both kidneys were invaded by tubercles, affecting most extensively the pyramidal portions, but extending also in many places through the cortex. The tubercular material was for the most part cheesy, and in places was breaking down. The portions of the kidney not invaded by tubercle showed the cortex to be considerably atrophied, the markings indistinct, and the cut surface of a mottled yellow color. The right ureter showed two tubercular masses, one-twelfth of an inch in diameter where the

ureter passed over the brim of the pelvis. In the left ureter there were two small masses near the renal pelvis. The mucous membrane of the bladder was ulcerated away for about one inch around the urethral orifice. Back of this was a second ulcer, about three-fourths of an inch in diameter, and several smaller ones were scattered over the vesical surface. The prostatic urethra was extensively infiltrated, the process extending forward into the spongy portion of the urethra. Small tubercular masses also were scattered all along the urethra, in decreasing numbers as the meatus was approached. The prostate was extensively infiltrated and cheesy. The right vesicula seminalis formed a cheesy mass about ½x¼ inch in size. The left was slightly involved in the same process. The epididymis on each side was enlarged and cheesy. The body of one testicle was invaded by more recent gray tubercle. The other was normal. The intestines showed some enlargement of the solitary follicles and old adhesions. The liver was normal in size, but universally adherent, and on both the free and the cut surfaces a few small tubercles were observed. Diffuse cirrhosis, moderate in amount, existed.

The case seemed to have been one of primary tuberculosis of the genito-urinary tract, because the lesions, particularly in the kidneys and about the neck of the bladder, were much more advanced than those in the lungs. Their extraordinary latency was very remarkable. Prior to the development of symptoms pointing to cystitis nothing was discovered in the urine to suggest anything more than chronic nephritis, although it had been frequently examined. It did not seem possible to determine which began first, the nephritis or the tubercular kidney lesion. The former was positively known to have existed for three and a half years, and probably antedated the patient's first entrance into the hospital.

There was one question, Dr. Van Santvoord said, which he would be glad if any of those present could answer for him, and that was as to the rapidity with which such a process as this could be developed. In reply to a question as to the order in which the several organs became involved, he said that the most marked lesions were found in the bladder. The epididymitis had existed for about eighteen months, and it was probable that the process had begun in this part or in the prostate gland. The pulmonary lesions were evidently less advanced than those in the genito-urinary tract.[1]

Dr. Walter Mendelson raised the question whether we were justified in unhesitatingly accepting this case as one of primary tuberculosis of the genito-urinary tract. It was true that the anatomical lesions seemed to show that the process had been longer at work in the genito-urinary tract than in the lungs; nevertheless, there was not, in his opinion, anything to show that the tubercular process might not have long been latent in the lungs, and that the genito-urinary tract had not been infected from them. This was rendered the more probable by the fact that we so often find on autopsy cheesy nodules in the lungs of persons who, during life, had given no signs of their existence. In view of the obscurity of the mode of infection in cases of genito-urinary tuberculosis, the speaker thought we should exercise the greatest caution in accepting the evidence on which the claim for primality was based in these cases.

[1] Since the above was written Dr. Van Santvoord adds the following: Ziegler (Path. Anat.) states that in the great majority of cases renal tuberculosis is embolic, but that in rare cases a tuberculosis beginning in the bladder, the prostate, the seminal canals, or the testicle may infect the kidney by way of the ureters (p. 1129, edition of 1885). On page 470 he calls attention to the identity of this mode of infection with that due to parasites, which give rise to more acute forms of disease. The predominant affection of the pyramids in the case reported, as above stated, points to infection by way of the ureters rather than by embolism. It is of course quite possible that the pulmonary tuberculosis might have been due to independent infection, especially as the patient was for a long time an inmate of a hospital ward in which there were always several cases of pulmonary tuberculosis. Kaufmann (Deutsche Chirurgie) states that tuberculosis of the urethra is very rare, and is always accompanied by extensive tuberculosis of the genito-urinary organs. It extends from the bladder and affects usually the prostatic, rarely also the membranous, urethra.

The President said that, in his opinion, the first of the genito-urinary organs to become diseased in this case was the testicle or the epididymis. It was his experience that the kidney was usually the last of all the organs to be involved.

Dr. B. Farquhar Curtis referred to Finck's studies on the subject of genito-urinary tuberculosis, the results of which seemed to prove that the prostate was infected before the kidneys.

Dr. Henry P. Loomis presented a specimen showing

PECULIAR TUMORS IN THE HEART-MUSCLE.

The heart was from a woman, twenty years of age, a prostitute, who gave the following history: She had borne three children and had had two miscarriages, the last miscarriage being about a year ago. She had always been healthy, with the exception of an attack of intermittent fever one year ago. She denied ever having had syphilis. Four days before admission to the hospital she had had a chill, followed by fever and sweating, and this was repeated twice, the last chill being on the day before admission. Since the first chill she had been troubled with dyspnœa. She had had muscæ volitantes, diplopia, frontal headache, dizziness, and swelling of the feet and legs during her pregnancies, but none in the intervals. Of late the urine had been increased in amount. On admission the physical signs were those of pneumonia. The heart-sounds were normal. The patient died on the third day after entering the hospital.

On autopsy, the entire right lung was found in the third stage of pneumonia. There were also evidences of fresh pleurisy. The liver was normal. The spleen was greatly enlarged. The kidneys presented the lesions of chronic diffuse nephritis. Pyosalpinx and purulent oöphoritis were present, and on the cervix uteri was what seemed to be a chancroid. No syphilitic lesions were found, however, in any other part of the body.

The heart was normal in size, no change was evident in the cavities or the valves, a few small atheromatous patches were noticed in the aorta, just above the valves. Two tumors the size of a French olive were embedded in the wall of the left ventricle near the auricular-ventricular septum, one an inch below the aortic valve, the other below and about an inch from the apex. The tumors were circumscribed, of a whitish-yellow color and hard consistency. A section of one of the tumors showed under the microscope that the centre was in a condition of coagulation necrosis, and that the peripheral zone was made up of round cells, between which was seen a basement substance. The round cells extended for a short distance beyond the apparent edge of the tumor in between the muscle fibres.

Dr. Prudden, who examined the section carefully, expressed tho opinion that the tumor was a *gumma*. Of the tumors of the heart tubercle is the most common, while gummata are very rare. The speaker had found but a few cases mentioned in American or English literature, and these were almost always associated with gummata in other organs.

Dr. Mendelson suggested that the lesion might possibly be the result of infection from the pneumonia, and he thought it would be well to examine the specimen for pneumococci.

Dr. Loomis replied that the lesion evidently antedated the pneumonia. The process was not an active one, and there was no acute suppuration present.

Dr. Van Santvoord said that it was not uncommon to meet with cases of endocarditis caused by the pneumococcus, but in the specimen presented the process was apparently much older than the pneumonia. The gross appearance of the lesions certainly suggested a gumma.

Dr. T. H. Myers presented some specimens of

UNIVERSAL SUPPURATIVE ARTHRITIS.

Cases, he said, where two, or even several joints are involved in such a process are common enough, but in

a search through the literature of the past ten years, he had found no case of a similar *universal* joint disease.

The specimen was taken from a foundling two months old. The autopsy was made by Dr. William P. Northrup. Body well nourished; slight swelling over carpo-metacarpal joints of left hand. Brain normal, as were lungs and spleen. Liver dark, congested, slight mottlings (anæmic?), in size normal. Gall-bladder moderately distended. Kidney cortex pale, markings indistinct. Stomach empty, mucous membrane pale, amount of mucus increased. Intestines empty, mucus increased in amount, bile-stained, in stringy masses; mucous membrane pale. Bladder normal. Joints: Right sterno-costal, both temporo-maxillary, both scapulo-humeral, both elbow, both wrist, both carpo-metacarpal, both hip, both knee, both ankle, both tarso-metatarsal joints contained abundance of pus, which was also found along the tendons of all the fingers and toes. The cartilages were easily broken from the bones. The cancellous tissue of the latter was deep red, soft, and could be easily broken down with the thumb.

Unfortunately, in this case the history of the parents and the details of parturition could not be obtained, as the child was a foundling. From the fact that syphilis was suspected before death the speaker felt sure that had any of the visceral lesions of syphilis been present they would have been noted prominently, also that no suppurative condition of the umbilicus or umbilical vessels would have escaped observation. The child, when admitted to the asylum, had onychia. The left hand was reddened and swollen, as was also one foot. The baby was sore all over on handling and was thought to have syphilis. It was removed to the "Marasmus Ward," and died four days later, without presenting any other symptoms. On disarticulating the sternum and clavicle, thick pus was noticed escaping from the joint and this caused the methodical examination of the remaining joints, as detailed above, to be made.

In looking over the literature of the subject the speaker had found the case most nearly approaching this in the number of joints involved to be one reported by Dr. Huber (*Arch. f. Path. Anat.*, Berlin, 1882, lxxxviii, p. 246). At the careful autopsy made by him on this case—a premature child fourteen days old—nearly all of both the large and small joints contained laudable pus; the ligaments, bones, and cartilages were normal, the synovial membranes infected in parts only. There was œdema of the lungs; the navel and umbilical vessels were normal. There were only a few swollen glands at the lower part of the ileum. The pleura, pericardium and peritoneum were normal. He mentions, however, a bed-sore, a subcutaneous abscess on one foot, a mediastinal abscess, and a hæmatoma of the dura, with adhesions of dura and pia and a congestion and softening of the cerebral substance. The kidney contained a deposit of urates. The heart and other organs were normal. The mother had had an attack of acute articular rheumatism during confinement, followed by a relapse. As there was no history or appearance of syphilis, though a careful examination was made for this on both parents and child, nor yet of any of the exanthemata, Huber made the diagnosis of rheumatic arthritis. Dr. Myers thought this case was more like a pyæmia, either "spontaneous," or secondary to the hæmatoma or bed-sore.

Another case is reported by Lane ("Tr. Path. Soc. London," 1884–5, xxxvi., 343). Here there was purulent effusion into several joints in a child certainly syphilitic. The joints affected were the hip, the shoulder, the right knee, and both elbows. They contained an abundance of pus. The synovial membranes were very vascular. The remaining joints were normal. Lane noted no change in the ossifying layer of the cartilage, nor in the articular cartilage. The child was healthy till six weeks old, when an eruption and snuffles were noted, and emaciation became marked, the child dying twenty days later. The writer considered the acute synovitis as corresponding with the prodromal form of synovitis found in adults, which precedes the first eruption, disappearing when this has become general.

Dr. Lee (*Brit. Med. Jour.*, November 6, 1880, p. 743) reports a similar case, cured by antisyphilitic treatment.

In considering the diagnosis in this present case, Dr. Myers said that it lay between syphilis, rheumatism, and pyæmia. In favor of the syphilitic origin was the præmortem diagnosis, and the fact that such a case is possible. On the other hand these congenital syphilitic joint-lesions are usually confined to a *very few* of the *larger* joints and are at best very rare. The epiphyseal line, or the periosteum, are the usual seats of the disease. These joints where the epiphyseal line runs within the joint limits, as the knee and elbow, are involved by preference.

Against the rheumatic origin was the extreme rarity of such cases in very young infants. Eustace Smith says ("Dis. of Children," N. Y., 1884, p. 155) the younger the child the more likely will the disease fasten upon the heart to the exclusion of the joints.

Taylor ("Dis. of Osseous System in Children," N. Y., 1875, p. 150), denies the existence of rheumatoid arthritis in infants, though recognizing it in children.

Howard ("Pepper's Sys. of Med.") regards acute articular affections in sucklings syphilitic or pyæmic as a rule, but recognizes a few authentic cases of rheumatic origin.

Widenhofer met with but one case (an infant twenty-three days old) out of a service of 70,000, and Rauchfuss in 15,000 cases found but two occurring in children at the breast (Senator, "Ziemssen's Cycl. of Pract. Med.," xvi., 17). There is usually, also, in these cases redness, swelling, and pain. The inflammation jumps from one joint to another after four or five days, and, finally, suppuration is very rare.

J. Lewis Smith, however ("Dis. of Children," N. Y., 1886, p. 399), describes briefly a form of rheumatic arthritis in young children which is not marked by redness, swelling, or much pain. The number of joints involved, however, is small. Cornil and Ranvier also ("Path. Histology," Phil., 1880, p. 228) describe cases of acute rheumatism, where the inflammation has attacked several articulations or only a single one, and the articular cavity is filled with a creamy pus, analogous to that of an abscess.

Pyæmia is the most usual cause for multiple suppurative arthritis, but though several joints are often involved the speaker did not know of another case where all were. Of this condition Billroth ("Surg. Path.," N. Y., 1883, p. 344) writes: "Purulent articular inflammation occurs in the pyæmia of the newly born. Children are even occasionally born with them, as has been witnessed by myself and others. Inflammations may develop and even run their course during fœtal life, as is shown by the cases where children are born with joints fully developed, but anchylosed."

The case seemed to belong among what Delafield and Prudden ("Handbook Path. Anat.," N. Y., 1885, p. 513) call "spontaneous pyæmia," where, without wound or fracture and without visceral infarctions, inflammation of joints and serous membranes occur with all the symptoms of pyæmia. Such cases must be very rare, as in the lungs alone metastatic abscesses are found in ninety-one per cent. of pyæmic deaths, according to Bryant's tables ("Surgery," Phil., 1881, p. 58).

A gonorrhœal origin had been suggested, the infection perhaps occurring from an ophthalmia. But there was no record of such an ophthalmia in this case, though the eyes of these children are always examined. The number of joints involved would also militate against this idea, though Fournier states that temporo-maxillary, sacro-iliac, sterno-clavicular, and intervertebral joints are affected in this disease as well as the larger joints ("Nouvel Dict. de Med. et de Chir. Prat.," t. v., p. 230).

The purulent arthritis described by Thomas Smith ("St. Bartholomew's Hospital Reports," 1874, p. 189) as originating from "subarticular abscesses," and occurring in such a large percentage of cases in infants under two

months old, was negatived here by the absence of such abscess-cavities and because this disease only involved one joint or two.

The general involvement of joints and negative history would also exclude the form of purulent arthritis in children, called by Volkman "catarrhal inflammation."

The diagnosis seemed, then, to be, by exclusion, spontaneous pyæmia.

Examination of the specimens showed smoothness of the articular surfaces; no anchylosis or periarticular thickening; no subarticular abscess-cavities; no change apparent to the eye in epiphyseal cartilage; no thickening of periosteum; no metastatic abscesses. The valves of the heart were smooth.

THE PRESIDENT remarked that cases such as this must be very rare, he himself having never seen or heard of an instance in which so many joints were involved. There were no signs of syphilis about the child, nor was there any suppuration in the umbilical vein.

In reply to the question as to whether the pus in the joints had been examined for bacteria, the President said that no examination of the kind had been made, as the case had been seen several years ago, at a time when the search for bacteria was not as eager as it was at present.

DR. JOHN S. ELY presented a specimen of

ANEURISM OF THE ASCENDING ARCH OF THE AORTA,

in which sudden death occurred without rupture of the sac (see p. 88).

DR. JOHN MESSENGER recalled a case of an enormous aneurism of the aorta, the specimen of which he had presented to the Society some twenty years ago. There was no rupture of the aneurism, but the man died in great distress. He was two months in dying, suffering all that time from extreme dyspnœa and cough. At the autopsy adhesions were found between the aneurismal sac and the sternum. The lungs were markedly compressed by the tumor.

DR. H. P. LOOMIS said that he believed that some of these cases of sudden death from aneurism could be explained by an examination of the heart-muscle. In a case of this kind which he had seen some time ago the heart seemed to be normal, but under the microscope the muscle was seen to be extensively diseased.

DR. WILLIAM P. NORTHRUP presented a specimen, showing

EXTENSIVE PULMONARY INTERLOBULAR EMPHYSEMA,

with the following history:

The patient, a female child of five months, was brought to the Out-door Department of the New York Foundling Asylum, by the nurse, who spoke only Italian. It is the habit of the Italians to return a child immediately if it becomes sick. She said the child was "little sick," and she was certain it had not whooping-cough and had never had convulsions.

The child coughed moderately, had no general depression, was well nourished, played about the room and laughed. The diagnosis of ordinary bronchitis of mild type was made, and nurse and patient sent home.

Fourteen days later patient was returned to the hospital with a temperature of 103°, with severe dyspnœa and cyanosis. It died three days later, or on the seventeenth day after the first observation was made.

Autopsy.—Body was well nourished, fat; brain normal; larynx moderately congested and dusky; mucous membrane wrinkled; aryteno-epiglottidean folds swollen and wrinkled; vocal cords normal; no ulcers in larynx; mucous membrane of epiglottis and trachea moderately congested and dusky. The mucous membrane had the appearance of being wrinkled, from post-mortem removal of a portion of the œdema and congestion.

Lungs: The left was the seat of extensive interstitial emphysema of the upper lobe. Beaded rows of air-sacs radiated from the root to the anterior margin, separating the lip of the lung so as to allow light to shine through from one lateral surface to another. One vesicle was larger than its fellows and separated the anterior upper lip of lung more than a centimetre, and bulged forward like a bladder of air under moderate pressure. At the posterior margin of the lower lobe was another air-bladder of simi lar size. In the posterior portion of the apex was recent pneumonia, extending about half way from apex to root, having upon the surface numerous petechiæ.

Right lung, moderate pneumonia of posterior margin from apex to base; petechiæ on pleural surface and few scattered vesicles of emphysema.

Stomach and intestines were the seat of moderate catarrh. Other organs normal.

This case had no previous history to explain the cause of the lesion. The condition of the larynx indicated that there may have been œdema and spasm, but there was no history of it, and the case was under the observation, for the last three days of life, of Dr. Lynde, the house physician, and no whooping-cough nor spasm of the glottis was noted.

In this connection it was of interest, Dr. Northrup said, to refer to a similar case published in the *American Journal of the Medical Sciences*, July, 1883, entitled "Extensive Interlobular Emphysema and Abscess of the Lung, after Whooping-cough, in a Child of Two Months—Unique Case." The case was published by the speaker and was considered, at that time, "unique." He had since seen a specimen very like it in the Museum of the Royal College of Physicians, in London. These were the only cases of such extensive emphysema of which he was aware.

Dr. Northrup also presented a gross specimen, together with microscopic slides, demonstrating a case of

NECROSIS OF THE LUNG

(posterior marginal), in a case of pleuro-pneumonia and cerebro-spinal meningitis.

Roseman B——, aged two and a half months, was reported by the wet nurse to be "sick," but without any special symptoms. She nursed well, had no vomiting or diarrhœa, was somewhat restless, had slight cough and a temperature of 102° F. Two days later, temperature 104° F., respirations rapid, dulness over right chest posteriorly, abundant fine râles. Five days later, or seventh day of illness, the right side of chest was flat from apex to base over posterior half of lung, and bronchial breathing was present from root to base. Liver was depressed five centimetres below the free border of the ribs in the nipple line. Temperature 102° F. Respiration 60, painful, general pain on handling. Ninth day child refused to nurse, became fretful, with 103° F. temperature, pulse 160, and respirations 60. Anterior fontanelle prominent, pupils normal, no paralysis, no convulsions, head was drawn somewhat backward but not rigid. Failed rapidly and died on the tenth day. (Records of the case furnished by Dr. Geo. S. Lynde.)

Autopsy, fourteen hours after death.—Body poorly nourished; brain and cord covered with extensive pus and fibrin exudate, veins distended with blood and having upon their lateral margins borders of pus and fibrin. The exudate upon the cord was mostly upon the posterior surface. Ventricles were softened post mortem, velum interpositum covered with a distinct layer of pus and fibrin. Lungs: Right pleural cavity contained a jelly-like pad of pus and fibrin. This was an inch thick in the postero-lateral region, and wholly enveloped the lung except on its mediastinal aspect. The lung was compressed, and had in its lower and middle lobes a moderate amount of broncho pneumonia. Along the posterior margin was a mass of lung tissue of lighter color, firmer, more smooth upon its cut surface than the surrounding lung, four centimetres in length, two in width, and one centimetre in depth. It had the appearance of necrosis from infarction. Besides the marginal mass there were several scattered masses having much the same appearance. In and about

the necrotic areas were small abscesses or dilated bronchi, containing pus. These proved on microscopic examination to be collections of pus and fibrin in the interlobular connective tissue. Heart, endocardium, pericardium, peritoneum, liver, spleen, stomach, and intestines normal. Kidneys not congested, no areas of congestion or anæmia—appeared normal.

Microscopic examination.—The marginal area consisted of necrotic tissue. Skirting this on its pulmonary side was an irregular zone of tissue congested, having beside tortuous vessels, excessive exudation of fibrin and pus with abundance of blood-cells. The connective-tissue interlobular septa were densely packed with pus and fibrin, forming what appeared to be small abscesses or dilated bronchi referred to in the description of the gross appearance. No thrombosis was found. There was evidence of severe exudative inflammation in and about the necrotic area. At the posterior pleural margin there was found necrosis of the lung-tissue. The necrotic tissue, stained by Gram's method, showed micrococci distributed in the tissue and within the pus-cells.

Dr. Van Santvoord thought the case looked like one of pneumonia from inhalation of a foreign body (Schluckpneumonie).

Dr. Northrup said that he had found no such cause present in this case.

Dr. H. M. Biggs said that we do at times have such appearances as these in cases of foreign-body pneumonia. He had seen them occasionally at autopsies of idiots. He believed that, in these cases, micro-organisms were taken in with the foreign bodies, particles of food, or may be of fluid.

Dr. Northrup remarked that, in the case presented, one lung was normal, and would not this argue against the supposition of foreign-body pneumonia?

Dr. Biggs replied that it certainly must be very rare to have a foreign-body pneumonia confined to one lung. Referring to the specimen of interlobular emphysema, he said that he had never seen such a marked case in the human subject. He had recently, however, seen a very pronounced case of the kind in a cow.

The Society then went into executive session.

Anatomical and Physiological Memoranda for the Practitioner.—The average weight of the male adult is 65 kilos., or 130 pounds; of women, 53 kilos., or about 110 pounds. The average height of American recruits is 171.8 ctm., or about 5 feet 9 inches. The average height of well-built men is 172 ctm.; of women, 160 ctm., or 5 feet 9 inches and 5 feet 4 inches respectively. One inch of height should add two pounds to weight. The specific gravity of the body ranges from 0.9500 to 1.030. The heart weighs 260 grammes in women, and 330 (10½ ounces) in men, the average weight is 292 grammes. The period of its maximum weight is between the ages of fifty and eighty. The amount of blood in the body is one-thirteenth the weight of the body, or 5 to 6 quarts, or 11 to 12 pounds. A man dies when he has lost a fifth of his blood. The heart with each contraction ejects 180 grammes (6 ounces) of blood from each ventricle, at a pressure in the left ventricle of one-fourth of an atmosphere, equal to a column of mercury 200 mm. high. The heart sends all the blood round the body twice every minute, or in about thirty-five contractions. A deadly poison injected into a vein kills in fifteen seconds, on the average; injected under the skin, in four minutes. A cubic millimetre of blood contains 5,000,000 blood-cells in men, 4,500,000 in women. There are three hundred red cells to every one white blood-cell. The red cells have an average diameter of $\frac{1}{3200}$ inch, the white cells of $\frac{1}{2500}$ inch. The specific gravity of the blood is 1.055. The frequency of the pulse in the new-born is 150; in infants of one year, 110; at two years, 95; at seven to fourteen years, 85; in the adult man, 72; woman, 80. The respirations are one-fourth as rapid as the pulse.

Correspondence.

OUR PARIS LETTER.

(From our Special Correspondent.)

HYPNOTISM, ITS DANGERS AND USES—INFANT MORTALITY AND ITS RELATIONS TO PULMONARY TUBERCULOSIS.

Paris, December 28, 1888.

At the annual meeting of the Academy of Medicine, which was held last week, after the usual formalities of paying tribute to the memory of those members who died during the year, the report of the Annual Secretary was read and the names of those to whom prizes had been awarded were announced. Dr. Proust, in his capacity of the outgoing secretary, after having gone over the official matters of the Academy, referred to the subject of hypnotism, which has been occupying the attention of the lay as well as of the medical public. He began by citing some of the most curious phenomena of suggestion, the import of which he estimated in the following terms: "The facts of this order have given rise to apprehensions on the subject of the dangers of hypnotism. These apprehensions are exaggerated. It will suffice for me to add that, if one referred to the minute inquiries carried out on the question, the dangers which hypnotism would cause to society are more theoretical than true. Criminals have till now thought, and with some reason, that it was more prudent for them to operate directly and without any intermediate agent." He then recalled that the hypnotic state was not a necessary condition of suggestion, and that in certain neuropathic subjects it is not impossible to suggest, even when fully awake, hallucinations or orders, and added: "Moreover, suggestion in the state of wakefulness, does it not play a considerable rôle in all the acts of social life? Is it not the consequence of a mutual suggestion, a sort of infatuation which takes possession of assemblies or crowds at certain times, and gives rise to manifestations sometimes imposing, sometimes formidable, but always curious for the psychologist, of political or religious excitement? and in medicine, does not suggestion occupy a large place? I do not speak of the suggestion provoked during sleep, of which numerous works, particularly those of our confrères of Nancy, have demonstrated the indisputable efficacy. Do we do anything else than suggestion, when we try to raise the hopes of our patients? Every physician who has been taken up with the long and interminable maladies of the nervous system, where one exhausts, often without result, all the resources of the Pharmacopœia, knows the part which he can draw for the great benefit of the patient by an encouraging reflection or a good word. Thus Forbes has been able to say with reason that the imagination should be reckoned among the normal means essentially inherent to the practice of a new method of cure."

In connection with this subject, and by way of comparison, I may here refer to a discussion that lately took place at the Academy of Medicine of Brussels, on the propriety of employing hypnotism for the entertainment of the public, or even of the expediency of its use in medicine, as a therapeutic agent. The discussion was introduced by Dr. Gluye, who considered that the curative power of hypnotism is very limited. He recalled that, since 1843, Braid had not succeeded in diffusing his method, which he recommended even for the cure of tetanus and of rabies, notwithstanding the distinguished support of Professor Carpenter and others. On the other hand, alienists, who should be the first to employ hypnotism to produce sleep, calm the delirium, and transform the insane ideas into reasonable ones, do not appear to be in a hurry to use this means. In Germany, at least, the alienists are on the lookout for new narcotics. After morphine, chloral; they have now sulphonal, the effects of which are very much vaunted by them. Dr.

Gluye concludes his note with the statement that hypnotism is not without danger for the patients or persons in health to whom it may be applied; but the danger exists equally for the hypnotizer, whose imagination is easily excited, and whose judgment often becomes perverted, as pointed out by Braid himself. This results also from the curious fact that, in the country of Magendie, the creator of experimental physiology, some distinguished men discuss seriously the action at a distance of medicaments in hypnotized subjects. For me, adds Dr. Gluye, hypnosis is a state of artificial mental alienation, in the literal sense of the word. He is, therefore, of opinion that experiments in hypnotism in public should be interdicted just as much as the exhibition of lunatics.

Dr. Landouzy, in a memoir which he has just published, studies the Parisian mortality of infants aged from one day to two years, and its relation with tuberculosis. The author states that during the quinquennial period from 1881 to 1885, he ascertained the death of 67,330 children aged from one day to two years. As the general mortality amounted to 284.091, he makes the remark that the fourth of the Parisian mortality is furnished by infants from their birth to two years. Of these 67,330 infants who died in Paris in five years, 1,531 only were, according to the official reports, tuberculous. But this figure is much lower than the reality, according to Dr. Landouzy, who is engaged in researches on the other maladies which had determined the death of infants during this same period. He asks whether all the deaths caused. according to the statistical report of the Prefecture of the Seine, by scrofula, meningitis, and the convulsions of infancy should not be included under the head of tuberculosis? In putting together all the cases, and by adding to them all the deaths from tuberculosis furnished by the report, Dr. Landouzy is of opinion that we are enormously below the true figure of the mortality by tuberculosis during the age of infancy. In fact, children who die of measles, whooping-cough, chronic bronchitis, pneumonia, gastro-enteritis, athrepsia, those which are affected with Pott's disease, diseases of the bones, white swellings, etc., are often nothing but tuberculous.

At the last meeting of the Council of Hygiene, a commission was appointed to inquire as to the expediency of replacing sulphur by antiseptic sprays for disinfecting localities contaminated by contagious diseases. It is known that the disinfecting properties of sulphur are at present much discussed. In Germany and in Russia they have given up the use of this product. They employ only the sprays of solutions of corrosive sublimate, which are followed by washings with carbolic acid, the furniture being previously removed and passed through a drying-stove.

WAS IT RHEUMATIC PERITONITIS?

To the Editor of The Medical Record.

Sir: Dr. Charles W. Packard's article, which appeared in The Medical Record of December 29, 1888, and entitled, "Was it Metastatic Rheumatic Peritonitis?" is a succinct statement of the course of a case of great interest to the general practitioner—the explanation of the symptoms is not necessarily dependent on the hypothesis of a rheumatic inflammation of the peritoneum having existed.

The doctor explains the absence of descriptions of the pathological appearances of rheumatic peritonitis by the statement "that there are no fatal cases." At the same time the case which he publishes presented symptoms of the greatest gravity, had the resistance of the patient been slightly less, the surrounding conditions not quite so favorable, or the physician less skilful, an autopsy would probably have thrown light on a case which "during part of its course seemed to fairly compel a diagnosis of peritonitis from some unexplained cause."

The facts stated by Dr. Packard, that the boy gave a history of previous chorea with subsequent articular pains, that on the occasion of his first visit he detected a slight systolic endocardial murmur, and also the age of the patient suggest embolism as the prime factor in the causation of the peritoneal symptoms, especially as we are assured by Dr. C. Hilton Fagge that an embolism in an artery may set up a peritonitis which may endanger life, and that in almost all cases the occurrence is complicated with a condition which Virchow has designated endocarditis maligna, on account of the severe and rapidly fatal course of some of the cases. These cases often have a rigor at the outset; there is a rise of two or three degrees, or more, in temperature, the pulse is quickened, the tongue dry, and vomiting or diarrhœa may be present. Articular pains are often complained of. Dr. Fagge ("Reynolds' System of Medicine," vol. ii., page 737) also states that examination of the heart at short intervals will detect variations in the physical signs, showing that acute changes in the valves are going on. In the case in point this seems to apply, as Dr. Packard remarks, that the slight heart-murmur heard on his first visit "had become much intensified by a fresh endocarditis."

An attack of acute rheumatic fever, of sufficient intensity to cause peritonitis of such violence would hardly be expected to disappear in a week, and with little or no anti-rheumatic treatment, the salicylate having been given after the peritoneal symptoms had almost completely subsided. Peritonitis, moreover, is a rare occurrence in acute rheumatism.

I think we can explain the symptoms best by assuming that a fragment became detached from the diseased valve and lodged in one of the arteries, in proximity to the peritoneum—the internal epigastric perhaps. This occurred two days before the doctor was called; irritation, congestion, and lastly inflammation, followed; the pain, at first most severe over the seat of the embolus, became general, and the symptoms of pronounced peritonitis followed. At a meeting of the New York Pathological Society, reported in The Medical Record, December 17, 1887, Dr. T. Mitchell Prudden remarks that in a very considerable number of cases of acute ulcerative endocarditis micro-organisms which readily produce phlebitis and peritonitis are present.

In writing this I do not desire to call in question the diagnosis, but the title of the paper appearing as an interrogation, prompted me to suggest what seems to me to be a satisfactory and rational explanation of the phenomena.

F. Percy Jenks, M.D.

409 Tenth Street, Brooklyn.
January 15, 1889.

CONCERNING RHEUMATIC PERITONITIS.

To the Editor of The Medical Record.

Sir: The interesting cases of so-called metastatic rheumatism recently reported recall a case with unusual features which fell under my observation in my student days. The case occurred in the practice of Dr. F. Findlay, of Franklinville, N. Y.

A young man was seized with typical symptoms of acute articular rheumatism. This was succeeded by the subsidence of the articular symptoms and acute pain referred to the region of the stomach, with repeated vomiting. It was especially noted that the invasion of the joints was followed by amelioration of the gastric symptoms, and *vice versa*. The persistence of the gastric phenomena finally necessitated the sole employment of the bowel for obtaining necessary nourishment, during which time his condition seemed past hope, and in the capacity of nurse I only left his bedside for food and sleep. The disappearance of articular and gastric symptoms was coincident, and apparently associated with the development of double parotitis which passed into the stage of suppuration. His illness was exhaustive in the extreme, his recovery tardy, if the expression be permissible, for he

has carried for over fifteen years an organic cardiac lesion which was a part of the early history, and which makes him almost an invalid to-day.

J. H. GREENE, M.D.

DUBUQUE, IA.

"THE POISON OF TYPHOID FEVER."

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In support of Dr. Edson's paper in a recent issue of THE RECORD, I would offer a few observations of three epidemics I have had the good fortune to see:

No. 1. In the small village of Fulford, Lower Canada, a French workman from a neighboring town, after a few days' illness, died of typhoid fever. Situated near the house, and on the lower level was a spring from which the neighboring families obtained their water-supply. Three well-marked cases of typhoid took place in the family using the water, and five milder cases of fever, all no doubt due to the contamination of the spring with the excretions from the house above it. No other case occurred in the village, and the epidemic died out after the closure of the spring. The soil and also the water was found to be very rich in organic matter.

No. 2. In December, 1886, I had an opportunity, while visiting a colleague at St. John's, Lower Canada, of investigating an epidemic at that place. As in the previous one I was able to trace its source. A case of fever occurred in an old barracks a short distance above the town a month previous to the outbreak. The water-supply for the town was taken from the river just below the barracks. At the time of my visit my colleague had seen thirty well-marked cases, and he estimated that no less than one hundred others were suffering from fever of a continued type. The fever was most effectually stamped out by ordering families to boil both water and milk for drinking purposes. I may say that no cases occurred in the town of Iberville, which is situated on the opposite bank of the river, but enjoying a different water-supply. The country in this section is low, and the water dark from organic material. Malarial fevers are unknown in this locality.

No. 3. The third lot of cases I saw at Bath Beach. The disease was prevalent among the farmers of Long Island during last summer. I saw two characteristic cases here, and many guests in the same hotel were suffering from malaise, headache, and diarrhœa, with slight elevations of temperature. I was informed on good authority that there were twenty cases of typhoid at Bath during last summer. I was unable to trace the cause of this epidemic, though it would seem that one at least was due to bathing in the bay, where a large amount of sewage drifts in and may be seen at low tide. In fact, the disease was more prevalent among those who bathed a great deal. As in the previous epidemic, many of the milder cases improved as soon as they were put upon sterilized milk and water. I would summarize as follows:

First, I think the poison spreads with greater rapidity and becomes more virulent in proportion to the amount of organic matter in the water and soil.

Second, When the water-supply is infected with the poison, most of those drinking it suffer to a greater or lesser extent, though all may not develop the characteristic symptoms.

Third, It is of the greatest importance that the disease should be recognized at its earliest stage, the source of the poison located, and both milk and water sterilized before using.

W. A. SHUFELT, M.D.

250 WEST ELEVENTH STREET, NEW YORK.

THE subject of the Lumleian Lectures to be delivered by Dr. John Harley next year is "Enteric Fever."—*Medical Press.*

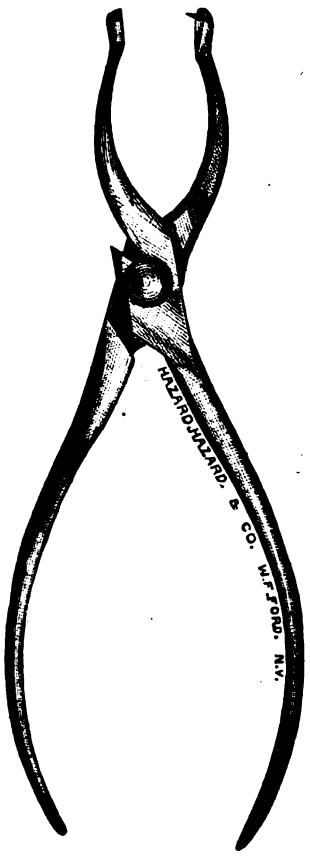
New Instruments.

FORCEPS FOR REFRACTURE OF NASAL SEPTUM.

BY GEORGE B. HOPE, M.D.,

NEW YORK.

THE accompanying cut represents a forceps, to be used in connection with the Adams forceps, in the operation for refracture of the nasal septum. To those who have done the Adams operation at all frequently, a number of disadvantages have no doubt presented themselves; either an unnecessarily great violence in proportion to the seemingly slender obstacle to be overcome, must be employed; the feature of multiple fracture with a possible loss of a portion of the septum occurring in certain cases; but, beyond all, the difficulty of controlling, with any degree of certainty, a fracture which will obtain the most satisfactory results in the forced displacement.



In the action of one blade carrying a steel pin, which is received into a corresponding circular opening in the opposite blade, the septum is pierced by a line of punctures drawn at a sufficient inter-distance to map out a direction of fracture in exact conformity with the intention of the operator, and, in completing the separation of the bony continuity with the Adams forceps, any extreme force ordinarily necessary is obviated, to the advantage of the tissues concerned.

The forceps, made by W. F. Ford, of Hazard, Hazard & Co., are joined either by the sliding or fixed lock—the latter requiring less care in preserving the proper position of the pin to the opposing blade.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 13 to January 19, 1889.

BY direction of the President, and in accordance with section 1246 Revised Statutes, an Army Retiring Board was appointed to meet in this city, at 11 A.M., Thursday, January 17, 1889, for the examination of such officers as might be ordered before it. Detail for the board: Colonel JEDEDIAH H BAXTER, Chief Medical Purveyor, and Major CHARLES R. GREENLEAF, Surgeon. Par. 2, S. O. 12, A. G. O., Washington, January 15, 1889.

MUNDAY, BENJAMIN, Captain and Assistant Surgeon. By direction of the Secretary of War, relieved from duty at Fort Sisseton, Dak., and to report in person to the commanding officer, Fort Sully, Dak., for duty at that post. Par. 2, S. O. No. 11, A. G. O., Washington, January 14, 1889.

ALDEN, CHARLES H., Lieutenant-Colonel, Surgeon, and Captain Edgar A. Mearns, Assistant Surgeon. Detailed for duty on Army Retiring Board to meet at St. Paul, Minn., at the call of the president thereof. Par. 7, S. O. No. 10, A. G. O., Washington, January 12, 1889.

HARRIS, HENRY S. T., First Lieutenant and Assistant Surgeon, will, upon the arrival of acting Assistant Surgeon Boyer, proceed from Camp Pena, Col., to the post of San Antonio, Tex., and report to the commanding officer, for temporary duty. Par. 4, S. O. 1, Headquarters Department of Tex., San Antonio, Tex., January 2, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending January 19, 1889.

DICKSON, A. H., Passed Assistant Surgeon. Detached from the Pensacola, and to the Atlanta.

OLCOTT, F. W., Assistant Surgeon. Detached from the Atlanta, and to the Vermont.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending January 19, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	12	4
Scarlet fever	277	58
Cerebro-spinal meningitis	2	2
Measles	377	30
Diphtheria	165	58
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

THE LATE DR. HOWARD PINKNEY OF THIS CITY.—The following tribute to the memory of Dr. Pinkney is offered by one of his many friends as supplementary to a notice of his death, which appeared some time since in THE RECORD: "Dr. Howard Pinkney left New York on May 5th, by the steamship Elbe, of the North German Lloyd line. He died in a railway carriage immediately after landing. He had just boarded the train for London from Southampton, and was found alone in a carriage, lying on his face. Dr. Ryerson, who happened to be a fellow-passenger, pronounced his death to have been from apoplexy. Dr. Pinkney had started upon his third visit to Europe. He was thoroughly exhausted by study and overwork, having all his life been closely wedded to his profession, and giving it more attention than was ever demanded by the most exacting sense of duty. He was the son of William Townsend Pinkney, and was born January 9, 1837, in this city, his father being at that time one of the ten Governors of Public Works. He was graduated from the Free Academy in 1856, receiving the degree of A.B. In 1860 he was graduated from the College of Physicians and Surgeons, with honors. He went from there immediately to Bellevue Hospital, where he served as House Surgeon until the breaking out of the Rebellion, when he volunteered as surgeon of the Ninth Regiment. He served at the battles of Ball's Bluff, Harper's Ferry, Antietam, South Mountain, and was several times assigned to special hospital duty, having at one time charge of the United States Army Hospital at Frederick City, Md. He there contracted typhoid fever, and was forced to resign. Having recovered, he again entered service as Assistant Surgeon, United States Army, and was located at Frederick City, Md. He also had charge of the Federal Hospital at Poolesville, Md., and the hospital at Keedysville, in December, 1862, when he resigned his commission. He was a member of the Order of the Army of the Potomac, and of the military Order of the Loyal Legion. He belonged to the New York County Medical Society, and represented it in London at the Medical Congress. He was a member of the Academy of Medicine, of the Physicians' Mutual Aid Society, and an honorary member of the Gynecological Society of Boston. He was for twelve years senior aural surgeon at the New York Eye and Ear Infirmary, and established and carried on for seven years a non-sectarian free dispensary in connection with the Church of the Holy Trinity. He discovered the method of discolorizing iodine. In 1863 he married Miss Clara Schley, of Frederick City, Md., who died in 1877. He leaves one son, Dr. William H. Pinkney, who was his partner and associate in business."

SUDDEN DEATH IN CHRONIC DISEASES.—The *Revue Générale de Clinique et de Thérapeutique* contains some interesting cases of sudden death resulting from affections of the liver and pancreas, from tubercular peritonitis, and from operations in the hepatic region. Dr. Cénas met with a case of sudden death in a patient aged fifty-six, suffering from primary carcinoma of the bile-duct, which had existed for three years. It was only when the tumor invaded the pylorus that disturbance in the digestive organs appeared, and that the general condition became affected. M. Cénas considers that death was due to reflex action proceeding from the duct-wall, and reacting on a dilated heart. He bases this belief on the experiments made by MM. Brown-Séquard, Goll, and Tarchanoff (who arrested the action of the heart during diastole by irritating the semilunar ganglia), and on clinical observations which demonstrate the existence of syncope, diminished action of the pulse, and coldness in violent hepatic colic, and in different forms of irritation of the bile-duct. MM. Roussel and Jacquemard describe a case of cancer of the pancreas with dilatation of the stomach, followed by sudden death. The patient was a man aged forty-five, who had suffered from bronchial catarrh and pulmonary emphysema for ten years, and who died suddenly. The necropsy revealed cancer of the pancreas. The head of the organ was completely destroyed; the body contained carcinomatous nodules. The other organs were healthy. M. Roussel cites an almost analogous case, observed by M. Chavanis, and considers that all these observations indicate the existence of a special zone of sensibility, and that a traumatic or other lesion in this zone may cause death by depression. The following case of general tubercular peritonitis, resulting in sudden death, was reported by M. Alamartine. The patient was a man aged twenty-five. Three weeks after entering the hospital, on attempting to get up he fell suddenly to the ground, and died in a few minutes. At the necropsy seven or eight litres of fluid were found in the abdomen. The peritoneum, over which numerous granulations were scattered, was lined with false membranes, which covered and matted together all the viscera. The liver was inflamed, but contained no tubercles. The lungs contained a few tubercles, with some caseous nodules. The brain and meninges were healthy.—Paris Cor. *British Medical Journal.*

POISONOUS BLOOD.—M. Mosso, of Turin, having carried out a series of experiments with the blood of eels, finds that it possesses marked poisonous properties. Even to the tongue it has an insupportable acridity, and a very small quantity of the serum is sufficient to kill a dog. Half a cubic centimetre injected beneath the skin of a dog weighing thirty-five pounds, killed it in four minutes. At this rate, an eel weighing five pounds, would contain enough poison to despatch ten men. The blood of animals thus poisoned cannot be made to coagulate, just as after the bite of serpents. Fortunately the blood is inert when introduced *viâ* the stomach, and it loses its toxic properties when heated.—*The Medical Press.*

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Original Articles.

THE INFLUENCE OF CARLSBAD WATER ON URIC ACID EXCRETION.*

BY SCHUMAN LECLERCQ, M.D.,

CARLSBAD, AUSTRIA.

MR. PRESIDENT AND GENTLEMEN OF THE NEW YORK ACADEMY OF MEDICINE: I am greatly pleased at the opportunity afforded me of addressing your honorable body this evening. As a member of one of the races which has contributed to the formation of that Anglo-Saxon people which has so distinguished itself in all quarters of the globe, and pre-eminently so in the United States of America, I feel that I am not among strangers, but among friends.

I am also conscious of the fact that I am standing before an august body, some of whose members have achieved a world-wide reputation and immortal fame in the domain of the healing art.

The subject which I take the liberty of bringing to your attention this evening is one which must, I think, possess interest to Americans, and especially to the medical men of this country, for Carlsbad is frequented more and more by your countrymen every year.

The beneficial effects of a "Carlsbad cure" in gout have been recognized by the profession for centuries past, but the theoretical grounds, upon which an indication for the "Carlsbad cure" might be based have been as vague as the theory of gout itself.

Professor Seegen was the first to establish a positive theory which might explain the efficacy of Carlsbad water in the treatment of gout. Seegen concluded from his investigations,[1, 2] that by the use of Carlsbad water there was a diminished nitrogenous metamorphosis and a diminution, amounting even to practical disappearance, of uric acid. It was generally believed that the effect of the Carlsbad water in gout depended upon the power to counteract the increased conversion of nitrogen, inherited or acquired by high living, this being the conception of the pathogenesis of gout which prevailed at that time. Coupled with the increased metamorphosis of albuminous compounds, the product of incomplete destruction of albuminous bodies, to wit, uric acid, was diminished possibly to subnormal, but at all events to normal proportions. Such was the theory in 1864. In the following year Professor Voit,[3] detecting the sources of error which led Seegen to his incorrect results, definitely refuted the theory of a lessened organic metamorphosis by the use of Carlsbad waters. With regard to this point, the extensive and lively discussion which then arose might be considered as having settled this question, and a recent attempt[4] to revive it must be deemed a mistake, all the more as the experiments yielded results which were contradictory in the different individuals experimented upon.

As for the second point, *i.e.*, the gradually diminished uric acid elimination, I have been unable to find any account of further investigation in this direction in the literature; at all events, Seegen's assertion, already referred to, continues to appear in the treatises on balneology and in those on gout which devote any considerable amount of space to the treatment of the disease with mineral waters.

* Read before the Section in Practice of Medicine of the New York Academy of Medicine, January 15, 1889.

At the suggestion of my friend, Dr. Herrmann, Director of the "Carlsbad Fremdenspital," I made a series of careful experiments with a view of ascertaining whether diminution of uric acid excretion under the influence of Carlsbad water, as accepted by Seegen, could be proven by our recent exact methods of quantitative analysis for uric acid. I made use of a method, recently advocated by Professor Haycraft[5] (of Aberdeen), slightly modified by Dr. Herrmann, and controlled by him with Ludwig's[6] method—the best we have—at Professor Huppert's laboratory of the University of Prag. Herrmann[7] ascertained that, although Haycraft's method gives comparatively too high results, owing to a simultaneous precipitation of some xanthine bodies (making a difference of 0.0029 per hundred urine), the loss of uric acid with either method does not exceed two per cent.; that it can, moreover, be thoroughly relied upon for clinical investigations and for the purpose of making comparative tests between a series of analyses. Nor is the accuracy of Haycraft's method invalidated either by the presence of albumen or of glucose.

Professor Haycraft's method consists principally in the following: By adding to the urine bicarbonate of soda and a solution of silver-nitrate of magnesia, previously rendered ammoniacal, a white gelatinous precipitate of urate of silver (and of phosphates) is obtained, which will not be reduced before it can be collected and washed on a felt-like filter properly made of asbestos and broken glass. The ready solubility in nitric acid of this urate-precipitate is used for estimating the silver by Volhard's method of titration. We then calculate the uric acid by its combination with silver. In order to avoid any negligence or mistake, I made the experiments on my own person. They were continued from September 19th to October 20th, and were arranged in this way. Having analyzed my daily amount of uric acid for five days, while placed upon a regulated diet and mode of life, I took Carlsbad water every day in gradually increasing quantities, and determined the amount of uric acid excreted during each twenty-four hours. The quantitative analyses were made every morning at the Carlsbad municipal laboratory, thanks to the kind permission of the mayor, Mr. Knoll, and the director of the salt-works, Dr. Szipöcs. The utmost care was taken in collecting the daily secretion from 6 A.M. to 6 A.M. of the following day. One hundred grammes of the well-mixed urine were used for two parallel tests. The quality and quantity of my food were absolutely the same during my experiments, admitting, however, such minute differences as might possibly arise from unimportant variations in weight of rolls, eggs, or in percentage of composition of my food. These factors could not by any possibility influence the excretion of uric acid to any considerable degree, for we have but to bear in mind that Lehmann,[8] in trials on his own person, ascertained that a strictly vegetable diet, when contrasted with a mixed diet, only revealed a difference of two grains uric acid per diem. For drinks I used wine taken from the same cask, besides water. With regard to the latter the quantity taken differed. I partook of it freely, first, because the important point to me was not to study the influence of common water on the excretion of uric acid; secondly, because the varying temperature of the atmosphere necessitated its free use; and, thirdly, because, even in taking an equal measure of water, I, like other observers, could not obtain a tolerable equal daily amount of urine. My *modus vivendi* and

diet were regulated so as to conform to that of Carlsbad patients, more especially of sufferers from gout. A short record will show this. I went to the spring at 6 A.M. and took the mineral water at intervals of fifteen minutes between each tumblerful (one tumblerful = 250 grammes), then followed an hour's quiet walking, after which I breakfasted off milk (300 grammes), a roll (average 81.5 grammes), and a soft-boiled egg. At noon I took a simple soup (puree of flour), beef (220 grammes), the same kind and quantity of vegetables (150 grammes), a roll, and 100 grammes of plain pudding. I took a long walk of several hours in the afternoon and supped at 7 P.M. off ham (70 grammes), one roll, a soft-boiled egg, and claret (100 grammes). I retired at ten.

The following table contains the result of my investigations (Table I.). It shows that the daily amount of uric acid excretion is upon the whole unaltered by the use of Carlsbad water and remains between 80 and 108 centigrammes a day, and that the total amount of uric acid excreted in a period of five consecutive days varies only between 4.023 and 4.890 grammes.

TABLE I.—*Daily Amount of Uric Acid Excretion.*

Date.	Twenty-four hours' urine in cubic centimetres.	Twenty-four hours' uric acid in grammes.		Carlsbad water.
Sept. 19....	1,345	1.046	Total amount of uric acid excreted in 5 days, 4.664.	None.
" 20....	1,350	0.878		"
" 21 ...	1,400	0.903		"
" 22....	1,665	0.872		"
" 23....	2.145	0.965		"
" 24....	1,665	0.947		2 tumblersful ("Mühlbr.")
" 25 ...	2,190	0.738		" " "
" 26....	2,060	0.796	4.160.	3 " "
" 27....	1,990	.....	Accident (glass broken.)	" " "
" 28....	2,337	0.862		" " "
" 29 ...	1,905	0.817		" " "
" 30....	1,955	0.748		" " "
Oct. 1....	1,805	0.730		" " "
" 2. ..	2,360	0.880	4.023.	4 " (2 "Mühlbr.," 2 "Felseng.")
" 3....	2,605	0.889		" " "
" 4..	2,104	0.776		" " "
" 5....	2,110	0.796		" " (2 "Felseng.," 2 "Sprudel.")
" 6....	1,890	0.740		" " "
" 7....	2,305	0.880	4.145.	" " "
" 8....	2,730	0.833		4 " ("Sprudel.")
" 9....	2,300	0.896		" " "
" 10....	2,690	0.851		" " "
" 11 ...	1,590	0.801		" " "
" 12....	1,855	0.907	4.486.	" " "
" 13....	2,130	1.030		" " "
" 14....	2.430	0.897		" " "
" 15....	2,030	0.954		" " "
" 16....	3,875	1.080		15 " Sprudel before breakfast.
" 17....	3,810	0.935	4.890.	15 " Sprudel in 3 doses.
" 18....	3,440	0.936		15 " " " 3 "
" 19....	2,180	0.985		None.
" 20...	1,730	0.967		"

The few days (September 25th, 30th, October 1st and 6th) in which the daily excretion varied between 74 and 80 centigrammes, some smaller irregularities (such as a shorter walk) may satisfactorily explain the minimum diminution. I am also disposed to consider the slight increase, noticed when I took enormous quantities of the mineral water, as only apparently so, for with Haycraft's method some xanthine bodies are precipitated at the same time, and are estimated as uric acid. Owing to the ingestion of such considerable quantities of Carlsbad water as I took in the last days of the experiments, these xanthine bodies were liable to be washed out in a more marked degree and to appear more plentifully in the urine; the increase, at any rate, was so moderate that it hardly needs mention. I lost 2,950 grammes in weight, owing probably to the considerable exercise and the quality of my food, which was wanting in sufficient fat and carbohydrates, so as to imitate the usual diet of the gouty patient at Carlsbad, and owing perhaps also to the high temperature of the Sprudel water (165° F.), sipped as hot as possible—a concession to Cadet de Vaux's prescription. I should like to give you a short review of the results of the experimental researches of different authors with regard to the influence of various agents on the excretion of uric acid; for then it will be easier for me to illustrate my table. In the following list, made out so as not to encroach too much on your valuable time, I have ranged in a schedule as many investigators, according to their stand-point in this question, as I could find in the literature (Table II.). You will notice the great difference of opinion existing on every point, and readily agree that this question cannot be decided, at least not on the ground of the experimental material obtained hitherto, particularly as but a few of the results have a decisive value. Many of the analyses were made with inaccurate chemical methods, where errors varied, on account of the inconstant and uncontrollable loss of uric acid these methods involve, nor were all the tests made with the urine of twenty-four hours, or the series of experiments, with a few exceptions, was not long enough to yield results that could be compared. The diet, furthermore, was not regulated with the subjects experimented on by all authors. Finally, the increase or decrease of uric acid is not necessarily due to any extraneous factor as claimed, as similar fluctuations are also observed under normal conditions. This latter fact is illustrated in my Table. Although I was most careful in every point of the experiment, I could not, at times, avoid the considerable variations of uric acid excretion (which took place from one day to another) any more than other observers, though I admit that some of them were more fortunate than myself in this respect. This is all the more striking, as by my strict adherence to a uniform diet and mode of life, every possible source of variation, in so far as the excretion of uric acid is concerned, was thoroughly excluded, and certainly if any effects of the Carlsbad water were forthcoming, every opportunity was afforded for their exhibition in my economy. It should be remembered, however, that according to Neubauer,[10] the amount of uric acid, unlike urea, depends less on the food eaten than on special internal conditions of the organism, and that it changes greatly even in the normal state, and may vary from two decigrammes to one gramme within twenty-four hours, and also that Lehmann's [14] trials on his own person point to the fact that the nature of the food influences the secretion of uric acid much less than that of urea.* As, therefore, no external cause could influence the incontrollable daily variations in my uric acid excretion, I must ascribe them to internal causes, such as a regulating nervous influence. In fact, there are authors who ascribe the final regulation of uric acid production and excretion to the nervous system. According to Latham [9] gout is caused by a disturbance of the vasomotor centre, which influences the processes of organic metamorphosis, particularly in the nervous system. The atypical formation of uric acid in the muscles, as accepted by Ebstein [10] in gout, could be considered from the same stand-point.

While Garrod's thread experiment is in favor of an excess of uric acid in the blood of the sufferer from gout, and though Ebstein afforded the experimental proof that uric acid is the "materia peccans," Ebstein does not consider it necessary to accept a general accumulation of uric acid, at least not for the primary form of articular gout, because a *localized* retention of uric acid or a formation of uric acid in a wrong place—independent of increased production—could satisfactorily explain the development of gouty symptoms. Moreover, though everybody agrees that there is an increased excretion and formation [11] of uric acid in leucæmia, this disease is never combined with gout, which is a disease for which we must assume a disposition for a weaker resistance of certain organs against uric acid, either inherited or acquired.

All this fully proves that the indication afforded by the secretion of uric acid cannot always be taken as an index of the quantity formed in the system (Garrod), and the beneficial influence of a remedy in uric acid diathesis cannot possibly be proved by analysis of urine. Although

* Marés [13] concludes from his recent experiments that, while urea is derived direct from the decomposition of the albuminates of the food and circulating in the system, uric acid is a product of the active protoplasm, particularly of the glandular cells.

TABLE II.—*List of Authors who Experimented on Uric Acid Excretion.*

Examined agent.	Uric Acid Excretion.		
	Increased.	Decreased.	Not influenced.
Water		Genth,[30] Mares.[31]	
Sodium		Münch [27] (with small doses).	Münch [27] (with contin. doses).
Sulphate of soda		Seegen.[2]	
Mineral Waters: Carlsbad		Seegen.[1]	
" " Friedrichshall		Mosler.[28]	
" " Wiesbaden	Neubauer [27] (bathing and drinking), Genth [30] (bathing), Braun,[29] Lecorché [27]	Genth [30] (drinking)	Séverin.[27]
" " Nauheim		Benke.[27]	
" " Vittel		Lecorché.[27]	
" " La Bourboule		Lecorché.[27]	
" " St Nectaire	Lecorché [27]	Lecorché [27]	Lecorché.[27]
" " Aulus	Alrig [32]		
Colchicum	Christison,[14] Chelius,[14] Maclagan,[33] Noël Paton.[34]	Graves,[30] Baecker,[62] Lecorché [27]	Garrod.[14]
Liqueur Laville (colchicum)	Lecorché [27]	Lecorché [27]	
Chinin. sulphuric	Garrod [14]	Ranke [36] (48 hours), Bosse.	
Hydrargyrum	Noël Paton [34]		
Hydrarg. + iod. of pot.	Noël Paton [34]		
Lithium		Bosse [37]	Bosse [37] (in gout).
Salicylic acid	Germain Seé, Bryasson,[30] Lecorché [27] (rheumatism), Salomé,[41] Noël Paton.	Bosse,[37] Noël Paton	Blancher.[40]
Eunymine			Herrmann.[43]
Chloride of potash		Haig [42] (large doses)	Herrmann [43] (large doses).
Seignette salt			
Tannin	Lecorché [27]		
Free glycerine	Horbaczewski and Kanera.[44]		
Fat		Horbaczewski and Kanera [44]	Herrmann.[43]
Fruit acids	Réveil,[27] Meissner [45]	Lavereau and Millon [67]	Herrmann.[43]
Sugar			Horbaczewski, and Kanera.[44]
Beer	Baecker.[46]		
Wine	Liebig [47]		? Herrmann.[43]
Alcohol		Hammond.[48]	
Tea and Coffee		Baecker.[46]	
Diseases: Typhus	Lecorché.[27]		
" Art. rheumat.			Lecorché.[27]
" Pneumonia	Botho Scheube [61] (after the crisis)	Ranke [36]	Charvot,[49] Haepfner.[50]
" Leucæmia, osteomalacia, anæmia		Many authors.	
" Nephrit. interst.			Salkowski,[51] Stadthagen.[55]
" Liver diseases	Lecorché [27] (5 cases)	Lecorché (1 case)	Lecorché (2 cases).
" Diabetes mel.	Lecorché [27]		
Muscular exercise	Beneke,[52] Genth,[27] Heller,[27] Speck,[27] Ranke [27] (violent ex.).	Lehmann,[14] Ranke,[27] (moderate ex.)	Bence Jones.[56]

my experiments were made on a healthy person, the same conditions just referred to would prevail undoubtedly in gouty patients. If, however, experiments were made on these under the same conditions, the question would inevitably present yet greater difficulties, as the phase of the disease will lend still greater complications to the results. For these reasons I am inclined to believe that in future the influence of a drug on the increase or decrease of the uric acid excretion will not be conclusive with regard to its indication or contraindication in gout.

From a general review of the results obtained in my experiments I am compelled to say: A decrease of uric acid excretion under the influence of the Carlsbad mineral waters, as accepted by Seegen, is not shown, if controlled by the recent analytical methods, which secure a much more accurate test than the method of weighing uric acid after precipitation by hydrochloric acid, as used by Seegen. Thus the experimental investigations, on the base of which we were accustomed to explain the remarkable action of Carlsbad in the treatment of gout, have proved untenable on repetition of the experiments. This is perhaps of less importance now, as the ideas which formerly prevailed regarding the nature of gout are also undergoing a complete revolution, and one which will yet require much work before everything is made clear. At all events, the experiments which up to now so clearly and so convincingly proved the therapeutical action of the Carlsbad water must now be considered insufficient. Let me refer to those general physiological and pathological principles which might enable us to understand more readily the facts of practical experience.

Looked upon clinically, the well-known beneficial influence of a course with the Carlsbad waters on gouty patients points in two directions.

We notice first in these patients an amelioration in those symptoms which are explained as being occasioned by the presence of the "materia peccans," be it excessive or not, in the blood or organs; I do not mean to say that gouty "tophi" and deposits appear to become considerably smaller after a course with the waters; this can hardly be expected, since Ebstein[10] has proved that these deposits of urate are separated from the living tissue, which is yet capable of undergoing a metamorphosis, by dead tissue,—but we see for instance that albuminuria, inflammations of the renal pelvis, and nervous troubles, as hypochondria, melancholia, hysteria, which accompany gout, may be improved or disappear.

According to our view we explain these complications as being produced by excessive quantities of uric acid dissolved in the blood, hence we may justly say that by the imbibing of the warm alkaline water, which so rapidly becomes diffused in the blood, the conditions for a prompt discharge are more favorable. The diluted urine, which soon becomes alkaline, in a short time removes the surplus of uric acid circulating in the blood.

But we also see, secondly, that the gouty attacks, formerly frequent, are kept off for some time, or have become less intense, or are stopped entirely, after a course with the mineral water. With regard to this therapeutical effect we cannot get along with the former explanation of a washing out, but we must say the cause of the disease, the diathesis, seems mitigated.

Without attempting at present to explain this fact I shall content myself with saying: Since Minkowski's [18] thorough researches we know the liver to have a third function, besides the gall secretion and the glycogen formation, namely, the synthetic formation of uric acid. We know that sulphate of soda, so plentiful in our mineral water, considerably stimulates the gall secretion; it is likely that the influence of this salt on the liver is not only shown with regard to the gall secretion, but that in some way or another the salt affects also the uric acid formation. We cannot, however, as yet say in what way or how far it is the case, as no preparatory investigations exist in that line. But aside from the question of an excess of uric acid in gout, be it localized (Ebstein) or general (Garrod,[14] Ebstein[10]), we have in gout an anomaly in organic metamorphosis which is undoubtedly a complicated process, since modern investigation would tend to prove that uric acid is synthetically formed by xanthine bodies (Minkowski,[18] Mach[16]) and since this physiological formation of uric acid synthesis has been attributed to various organs. Charcot[10] already tried to connect gout with functional disturbances of the liver and Minkowski's

experiments tend to attribute the synthesis of uric acid to the same organ. The investigations of Kossel[17] make it appear that the xanthine bodies are products of splitting up of the nucleines, which derive from the substance of the nuclei of cells. In such animals (like birds and serpents), whose blood is rich in elements containing nuclei, and whose muscles are much richer in hypoxanthine than those of mammalia, we find a far greater production of uric acid. Chrzonszczewski[18] and Pawlinoff[19] noticed that the deposits of uric acid are found particularly in the neighborhood of the nuclei. The increased excretion of uric acid with the urine in leucæmia may be accounted for by the increase of white blood-corpusculi, which means an increase of the elements containing nuclei. Stadthagen,[11] however, showed that it is not the hypertrophy of the spleen in leucæmia which influences uric acid formation.

Such anomalies of metamorphosis have derived benefit from the Carlsbad cure, which I am inclined to ascribe to the great improvement which has taken place in the general bodily condition; and as the food is so important a pathogenetic factor in that group of diseases (diabetes, adiposity, gout, oxaluria, pyrocatechinuria, cystinuria), we might justly ask whether a faulty digestion of the stomach cannot promote the gouty process under certain conditions, of which we unfortunately know nothing, for intance, by the absorption of abnormous products of the food. Wine, for instance, has no influence on the increase or decrease of uric acid excretion; yet many close observers attributed a sudden attack of gout positively and with apparent right to a single imprudent use of wine in certain cases. How could we, then, explain this effect, if it were not for the well-established observation that alcohol has a direct protracting and thus pathological influence on the digestion of the stomach? From this stand-point also, *i.e.*, merely from the direct topical action of Carlsbad water on the stomach and the liver, which is the seat of the synthetical composition of uric acid, we could explain its recognized beneficial influence, at least in many phases and forms of gout.

Now, according to Garrod, the mineral waters are indicated in gout for the reason that the diathesis leading to its production is often closely connected with deranged hepatic function, and Ebstein recommends them particularly in those forms of gout complicated with plethora or gastric symptoms (see also Murray Forbes, Barlow, Parry and Sutton,[14] and Robson Roose [20]).

The compound action of Carlsbad water arises in the first place from the influence of the warm water itself, which, "when absorbed in large quantities, powerfully stimulates the process of the animal economy and increases the various secretions" (Garrod), secondly from the salts. With regard to these, the facts placed beyond doubt by experiments are the following: Sulphate of soda produces increased peristalsis and excretion of water, urine, and urea. The cathartic action cuts short, so to speak, complete digestion and absorption of the ingesta. Excretory matters, which would otherwise be retained (and possibly cause auto-infection?), are quicker eliminated than sub norma. Chloride of sodium greatly excites the stomach's functions and induces increase of urine and of the nitrogenous excretion; while carbonate of soda improves the digestive power of the stomach, increases peristalsis, and exalts the natural alkalinity of the blood. If now, by virtue of the properties of the constituents of Carlsbad water, there is an increase of peristalsis and diuresis, and an increased flow of liquids in the tissues, while plenty of out-door exercise and baths are taken, and less food—which is partly cut short, partly eagerly assimilated, owing to a hunger of the protoplasm—fewer products of the regressive metamorphosis will circulate in the blood and organs, while those that circulate are more easily eliminated on account of the diuretic effect and the increase of all secretory functions. Finally, the secretions are not only increased by the Carlsbad water, but also the pressure under which they are secreted is raised by sipping fluids. This is most likely due to nervous influence, for Kronecker[21] shows that a liquid taken in many small sips will for the time completely abolish the inhibitory action of the vagus of the heart. Brunton[22] calls attention to this fact "in consequence of which Carlsbad water, when taken in numerous sips for an hour or more, as at Carlsbad itself, is so exceedingly efficacious in hepatic diseases." This consideration will serve to assist us in explaining how certain predispositions of tissues, like the cartilage, to receive injuries in gout may be effectually combated with the Carlsbad mineral water. The increased pressure just referred to would be beneficial by increasing the "vis a tergo" in such organs as have a torpid tissue change, owing to the total absence of blood-vessels or their scant distribution at long intervals between the capillary vessels. The alimentary liquid being now easier renewed the conditions are not favorable for a deposit of urates. So much for the Carlsbad water.

The Carlsbad cure, which combines yet other factors, such as bathing, diet, and exercise, has been thoroughly studied in an excellent paper, read by your present chairman, Dr. Page,[23] before this distinguished society, some time ago, and I take the liberty of referring to it for further information. Hot baths in particular will be useful by increasing the activity of circulation and respiration. Increased consumption of oxygen and exhalation of carbonic acid will effectuate conversion of fat (adiposity being so often connected with gout) and decomposition of the constituents of the body containing nitrogen, with corresponding increase of urea in the urine. Even such a critical observer as Leichtenstern [24] acknowledges "the fact shown by multiplied experience that the products and residue of chronic inflammation and hyperplasia of tissue (hypertrophy of liver in gout) can be favorably influenced by warm baths, even of indifferent temperature, when supported by a corresponding change in diet, mode of life, bodily exercise, and the use of mineral waters." Then mud-baths will prove one of the most agreeable forms of local or general poultices to the gouty patient, and with regard to Russian baths it may be said that Tichborne[25] lately detected the presence of uric acid in the sweat secreted in Russian baths.

As a contraindication of the "Carlsbad cure" in gout I am inclined to determine those advanced stages of the disease with serious structural implication of the kidneys, or where cachexia has resulted, aside from such other general pathological cases where the cure is contraindicated anyhow (cardiac disease, considerable anæmia, carcinoma, pulmonary consumption, debility).

If, according to Garrod, the causes exciting a gouty fit are those which induce a less alkaline condition of the blood * or which temporarily check the eliminating power of the kidneys, the properties of the alkaline and diuretic Carlsbad water fully establishes its prophylactic value.

A good proof for the efficacy of alkalies is no doubt Cullen's[14] advocating them, and we can lay the more stress upon this statement, as, being a partisan of an entirely opposite idea on the nature of gout, he could not possibly be said to have been biased by theoretical reflections.

I am greatly indebted to you, Mr. President and gentlemen of the Academy, for the kindness with which you have listened to my paper.

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MONUMENTS TO PHYSICIANS.—On October 28th two monuments were dedicated at Milan. One was dedicated to the memory of the late Dr. Gaetano Pini, the founder of the Milan Rachitic Institute, of the Italian Society of Hygiene, and of the Cremation Society. The other was dedicated to the late Dr. Agostino Bertani. He was a patriot, a follower of Garibaldi, and took part in all the principal battles for the independence of his country. He was the author of an important sanitary codex, which has been unanimously approved at the last session of the Italian Parliament.—*Ital. Cor. Chicago Medical Journal.*

PARISIAN VIEW OF AMERICAN MEDICAL COLLEGES.—While the organization of the American schools is imperfect and very rudimentary, nevertheless there are certain practices worthy of imitation; such as the methodical arrangement of the students' day, the weekly quizzes, directed by the professors' substitutes, and the six-weeks courses for physicians desirous of overhauling their scientific baggage.—*Progrès Médical—Philadelphia Medical Times.*

A CASE OF PERFORATION OF THE VERMIFORM APPENDIX, GENERAL PERITONITIS, LAPAROTOMY, ACCIDENT, AND RECOVERY; WITH REMARKS.[1]

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ROBERT W——, aged fifty, a boss painter, was first seen by me at 8 A.M., Tuesday, October 23, 1888.

The patient gave the following history of his present trouble. For several months past he had had, as a rule, distress in the right iliac region after drinking coffee; he had never had any real painter's colic, but suffered from constipation; on the evening previous to the attack, while descending the Metropolitan Opera House stairway, he was seized with distress in the lower part of his stomach; on Monday, October 22d, he was busy all day fresco-painting, though the uncomfortable feeling in his bowels continued; about nine o'clock that evening he was suddenly taken with violent intestinal cramps, the pains being principally on the right side, and accompanied with nausea; he supposed it was an attack of acute indigestion, and at once drank some Jamaica ginger, lay down upon a lounge, and had a mustard-plaster applied to the abdomen. This gave him some temporary relief. His wife, not feeling well, then went to bed, but on awakening at about 11 P.M. she heard her husband groaning in the dining-room, and going there found him still on the lounge, lying on his back, with the knees drawn up, and suffering intensely with severe colicky pains and chilly sensations; he was unable to walk, but his wife, with assistance, succeeded in getting him into bed. She continued the mustard-plasters, applied hot bottles to his extremities, and used various household remedies, so that by 2 A.M. he was fairly comfortable.

At 8 A.M. Tuesday, when I saw him, he was in bed, lying on his left side, with the knees drawn up; had an anxious countenance, a suppressed cough, gave forth frequent groans, and complained of increasing pains throughout the abdomen, but more severe on the right side. His temperature in the mouth was 100⅕° F., and the pulse 98. His appetite was poor and the bowels had not operated for several days. There was slight general tympanites, with scarcely perceptible dulness below the cæcum. Slight pressure, or percussion of the abdomen, caused outcries from the patient and gave him great pain.

Notwithstanding the fact of the low temperature and pulse, the diagnosis of appendicitis with peritonitis, from probable perforation, was unhesitatingly made. As the condition of the patient was not grave enough to warrant an immediate operation, a palliative plan of treatment was adopted. Absolute rest in bed, in a recumbent position, with hot applications constantly applied to the abdomen, was directed. These were made by saturating flannels in a pint of hot water containing one teaspoonful of turpentine, then wrung out, placed on the abdomen, and covered by a hot-water bag. Great relief was experienced by the use of these applications, while cold could not be tolerated.

A seidlitz-powder was ordered, to be repeated, if not effective, in three hours, and followed in the morning by a glass of Victoria Hunyadi water.

For the pain and fever, morphine, gr. ⅛, and antipyrine, gr. viij., were directed to be given every three hours, as necessary. Wednesday morning the patient reported that he had passed a comfortable night, and had had two soft copious stools. His temperature was 99⅘° F., and pulse 85. There was still slight tympanites, with tenderness of the abdomen and dulness on the right side, but apparently a generally improved condition of the patient. He was not seen again until early Thursday afternoon, when, at a glance, it was evident that he was worse. He had but little pain, but his countenance was pale and pinched, the

[1] Paper read and patient exhibited at a meeting of the Northwestern Medical and Surgical Society, New York, December 19, 1888.

suppressed cough more prominent, the temperature 100⅕° F., and the pulse 76. His wife stated that on the afternoon previous, being nearly free from pain and making light of his trouble, he had stopped the medicine and applications, and had sat up, out of bed, for some time, until a recurrence of the colicky pains compelled him to return to his bed. The abdomen was now found to be unusually sensitive, with increased tympanites and a fulness above the crest of the right ilium. Deep-seated dulness was detected at this point, on careful percussion, and appeared to cover a spot about the size of a hen's egg. There was now no doubt that an operation was necessary, but as it was getting late in the day, the area of dulness small, and the condition of the patient fair, I decided to wait until morning before submitting him to an operation.

The delay proved dangerous, for about 6.30 the next morning, Friday, the patient was awakened by a terrible burning pain in the right inguinal region, which radiated over the whole abdominal cavity and rapidly grew worse. The family hastily sent for me, and the summons too well told me what had happened. It was evident that a perforation had probably taken place, Monday evening, that a protective sac had formed, that though the patient was quite well Wednesday, a sneaking peritonitis had been developing, and that this new attack was the result of the bursting of the sac and a full-blown general peritonitis. At 7.30 A.M. the patient had a temperature of 99⅘° F., pulse 85, and was given an opiate to relieve the intense suffering. The fulness which was noticed in the inguinal region the day before had disappeared.

Having the sole interest of the patient at heart, I sent for our fellow-member, Dr. W. Gill Wylie, an expert laparotomist, to perform the operation, rather than do it myself. The choice was well made, as the result shows. At 9 A.M. the patient had a chill, and a temperature of 101¼° F., with increasing tympanites, pain, and nausea. At 11 A.M. he was sweating profusely, had a temperature of 102° F., pulse 110, and was in partial collapse. Owing to other engagements Dr. Wylie was not able to commence the operation until 11.30 A.M., when it was performed, under ether, with the assistance of his brother, Dr. R. H. Wylie, and myself; the patient's abdomen, and the hands of the operator and assistants, having been previously washed in a solution of bichloride (1–2,000). It consisted in cutting an oblique opening down to the peritoneum just above the crest of the right ilium and, later, another opening, in the median line, just below the umbilicus. The peritoneum, deeply congested, presented in the lateral opening and was bulged out by an indistinct mass of intestines. A hypodermic syringe withdrew some serum, but no pus. For fear of injuring the intestines, which appeared to be matted together, and in order to do a thorough operation, Dr. Wylie then made an incision in the linea alba, below the umbilicus, when again the peritoneum, greatly congested, protruded from the opening. Upon incising it, a little gas and a pint or more of purulent serum, with large flakes of lymph, escaped. There was a fetid odor, but no discoverable fæces. The peritoneum was inflamed and granular, and the intestines, excepting those in the pelvis, were entirely matted together by quite firm adhesions.

The wisdom of the median incision was now apparent, for in no other way could the adhesions have been safely broken up, or the whole abdominal cavity thoroughly cleared of the septic material which had escaped, or been developed, in it. Dr. Wylie introduced his hand in the median opening, and very carefully broke up the adhesions and pockets of purulent collections between the intestines. The appendix was found pointing upward (on the cæcum), and firmly fixed in a (ruptured peritoneal) sac, which latter readily admitted the finger. A hard body, one-fourth by one-half inch in size, apparently a bean, was discovered lying beside the appendix, in the sac, having evidently recently escaped from it.

The lateral opening in the abdomen was then made complete, and the whole cavity thoroughly washed out with plain boiled water at a temperature of 110° F. About five gallons were run through with a fountain-syringe, having a glass nozzle one foot in length, and as thick as your finger. The doctor during the douching separated the intestines, in every part of the abdomen, with his hand. When the water ran clear the douching was stopped, enough water left in the abdomen to float the intestines, and the wounds sutured in the usual manner with interrupted deep and superficial silk sutures. A glass drainage-tube was of course inserted in each wound; that in the lateral being placed in the sac containing the appendix. *The appendix* being fixed, the bowel empty, and no fæces escaping, it *was not disturbed or sutured.* Iodoform and absorbent dressing, with adhesive plaster and bandages, were applied as usual, and the patient left in charge of a trained nurse.

The operation lasted less than one hour and the patient rallied nicely from it. Less than two hours later the patient's temperature and pulse had fallen from 102° F. and 110, respectively, to a temperature of 98⅘° F. and a pulse of 90. For the next twenty-four hours the temperature averaged 99° F., the pulse 85; the patient was comfortable without opiates; there was a profuse continuous serous flow from both tubes, and from the lateral tube a fecal odor escaped. The kidneys acted regularly from eight hours after the operation.

To counteract the great irritation and discharge from the peritoneum, and to prevent vomiting, nothing was given in the way of drink or food for the first twenty-four hours.

During this period there were attempts at retching, but the patient controlled them by his will. From this on the patient was gradually able to take, every three hours, a teaspoonful or more of cold water, previously sterilized, or Brush's kumyss. The latter was a great success, for he was not able to take anything else for the next four days, without attempts to vomit. Later on the diet-list was increased by boiled milk (sterilized), milk-punch, peptonized milk, and black, or beef, tea.

The second twenty-four hours the patient was quite comfortable, slept well at intervals, had an average temperature of 100⅕° F., a pulse of 90, and the wounds looked well; the lateral one discharging freely a chocolate fluid, slightly feculent. In the first half of the third twenty-four hours the patient became uneasy, had an anxious, pinched look, much abdominal pain, and tympanites, which was increasing; and the temperature ran up to 101⅘° F. and the pulse to 102. The central drainage-tube, having ceased to discharge, was removed, and a seidlitz-powder administered, to which was added, at Dr. Wylie's suggestion, a teaspoonful of Epsom salts. This was followed in three hours by an enema and a hard stool, and in the next few hours by two large diarrhœal movements, which had a most excellent effect upon the patient. He became more comfortable, there was less tympanites, the temperature fell half a degree, and the pulse from 102 to 88. In the fourth twenty-four hours the lateral wound was irritable and painful, and the temperature, which had risen, fell to 100⅕° F., after the integument was separated and a little pus had escaped.

In the fifth twenty four hours the patient had apparently passed all danger, his appetite was improving, the quantity of food was increased, there was but little tympanites or tenderness, he had a natural movement, after an injection, and the temperature fell to 99° F. and the pulse to 78.

In the sixth twenty-four hours the patient was still better, and the family were told that he was now entirely out of danger, and, barring accidents, which could not occur without gross carelessness, he would certainly get well.

As the central wound looked firm and dry, the silk sutures were carefully removed, extra-long adhesive straps applied, and a firm pad of cotton with a bandage added. The patient was also cautioned against any attempt to

strain, or sit up in bed for any purpose whatever. In the afternoon of this day, while rejoicing over the blessings of successful surgery, my feelings were rudely upset by a hasty summons to see the patient, who, it was said, was dying.

On entering the house everybody was found in a panic, and nothing could be learned until the nurse recovered sufficiently to tell me that the abdomen had burst open and that the bowels were all out. I was as nearly upset as the nurse at this state of affairs, and the shock received was beyond description. However, learning that Dr. Wylie had been sent for, and would share my responsibilities in the matter, I felt easier. The patient looked badly, moaned constantly, and thought his end had come, but acted quietly withal. I learned the next day from the patient, after the nurse had left, that the accident happened after a dispute between himself and the nurse as to the propriety of his taking food more freely. She reluctantly yielded, gave him a glass of milk, but would not assist him to drink, so he, with much difficulty, raised up on his elbow, in a strained position, and the central wound burst open. He at once told the nurse that something had given way, but she said it was nonsense, paid no attention to his alarms, until she saw by his countenance and groans that something really was wrong; and then, on removing the bed-clothing, was greatly astonished at seeing his bowels protruding from under the bandages. When I arrived, about twenty minutes later, about half a peck of intestines, slightly warm, were found lying upon his abdomen. The bandages and plasters were quickly removed and the bowels wrapped in hot wet towels, preparatory to washing them in plain boiled water. It was then easy to see the numerous patches of adhesions which Dr. Wylie had broken up at the operation. The intestines in the bite of the wound looked dark and as though they had been pinched in a door. The rest were covered with iodoform, cotton, plaster, and pus. I then discovered that the pus came from several small mural abscesses in the superficial fascia.

The infection of the parts by the septic fluid, at the time of the operation, undoubtedly caused these abscesses, and, secondarily, the bursting of the wound.

In several places it was very difficult to remove the cotton from the intestines, even after prolonged soaking, and, as it seemed to be embedded in granulations, what could not be pulled away or cut off was returned with the bowels. Owing to the rigidity of the abdomen, as it was thought best not to etherize, it required considerable pressure and manipulations, on the part of myself and the nurse, to replace the bowels, particularly the last loop, which was distended with gas. Shortly after replacing the intestines, Dr. Wylie arrived, and then quickly sutured the wound with silver wire, and all was well again. The patient had had a free watery passage in the morning, from the seidlitz and Epsom mixture, and a few hours after the accident another stool. In the evening he had a temperature of 99° F., pulse 108, and was suffering from constant griping pains in the bowels. Morphine, gr. $\frac{1}{8}$, was then given hypodermatically. This was the only time he had an opiate after the original operation.

In the first half of the next day, or seventh twenty-four hours, the temperature had gone up to 100$\frac{1}{5}$ F., pulse to 100, and there was much pain and tympanites, with symptoms of fresh peritonitis. The seidlitz-mixture was again given, and in the next few hours much flatus escaped from the rectum, and he also had two watery stools. The temperature and pulse then fell to nearly normal, and the patient became very comfortable.

The next day, the eighth after the operation, the temperature and pulse became normal and remained so. The glass tube in the lateral wound, and which had gradually been forced out, was then removed. Both wounds, superficially, were slow in healing up, owing to slight sloughs in the subintegumentary fascia, but in the end the union was firm, and there was no tendency to hernia.

During the next week the patient was frequently distressed with tympanites, but a dose of the seidlitz-mixture quickly gave him relief. There was the usual costive and paretic condition of the bowel after peritonitis. For this strychnia (gr. $\frac{1}{40}$) was given, in Keyes' tonic (hydrarg. bichlorid., gr. $\frac{1}{4}$, and tr. cinch. co., ʒ j.), after each meal, with excellent effect. Within three weeks after the primary operation the patient was able to walk about the house, and about a week later, out-doors. As a support an elastic abdominal bandage, having a covered sole-leather pad in front, was applied, and directed to be worn when walking.

The history of this case has been given rather fully, because it is believed that it will therefore be more instructive to the beginner, and possibly to the experienced surgeon also, as detailed histories are to the former what experience is to the latter.

In reviewing this case, it must be evident to all that the man would have died without an operation; and further, that the ordinary lateral opening, and failure to enter the abdomen, break up the adhesions, and wash out the cavity, would have ended likewise. Even as it was, the operation should have been performed at least one day earlier, and would have been, had I not been misled by the apparently favorable condition of the patient on the second day, and also by the perusal of an article (recently published) advocating delay, on the ground that typhlitic diseases are extra-peritoneal, and not likely to set up peritonitis or rupture into the peritoneal cavity. It then looked like a mistake in diagnosis, and as though it was a simple perityphlitic inflammation undergoing resolution.

If one studies the cases of inflammation of the appendix, and of perityphlitic abscesses, reported by Bull in *New York Medical Journal*, vol. xviii., 1873, and New York MEDICAL RECORD, vol. xxix., March 6, 1886, Burchard in *New York Medical Journal*, vol. xxxiii., 1881, Weir in New York MEDICAL RECORD, vol. xxxi., 1887, Sands in "Annals of the Anatomical and Surgical Society," Brooklyn, vol. ii., 1880, and *New York Medical Journal*, February 25, 1888, and also the cases reported by others, he cannot help believing that the question of location of these diseases, *i.e.*, whether intra- or extra-peritoneal, is given more prominence and enters more largely into the method of treatment than is judicious. As a result of this, many physicians and surgeons temporize and wait for a supposed extra-peritoneal abscess to kindly come to the surface and be opened; meanwhile, many a valuable life (even in our own profession) has been lost by an insidious general peritonitis or pyæmia, or the bursting of the abscess internally, with the same result. It is gratifying to reflect that nearly all the writers above referred to, and many other prominent surgeons in America and Europe, are not advocates of this policy of waiting for something to turn up, but, recognizing the fact that, though nature often does her best to wall up the poisonous material resulting from inflammation or perforation of the appendix or cæcum, she is, without prompt surgical relief, almost always an entirely incompetent and fata operator. The late Dr. Sands and others have admitted, and the operations and post-mortems in such cases confirm their statements, that in the larger proportion of perityphlitic abscesses, seeds, fæcal concretions, etc., are found within them, thus proving that the disease originated in either perforation of the adjoining and adherent appendix or cæcum.[1] Further, many of these cases give histories of long-continued distress in the region of the cæcum previous to the final abscess, or general peritonitis. These are the cases of circumscribed typhlitis which often resolve, only to return again, and eventually end fatally. The clinical evidence given by Dr. Weir, founded on a large collection of cases, is indisputably in favor of

[1] After reading this paper, the writer's attention was called by Dr. W. T. Bull to a paper recently read by him before the Medical Society of London, on the Surgical Management of Typhlitis and Perityphlitis. See The Lancet (London), November 10, 1888. This paper, which was discussed by Drs. Weir, Treves, and others, gives positive evidence on the disease starting in the appendix and being intra-peritoneal, and is also a strong plea for early operation.

perityphlitic diseases originating and being in the peritoneal cavity.

Having attempted to prove that the so-called extra-peritoneal abscesses are admitted to have originated from perforation of the appendix or cæcum, the writer will now quote from an original worker in this field of anatomy to show that these organs are completely surrounded by the peritoneum and in its cavity. Frederick Treves, Hunterian Professor at the Royal College of Surgeons and Surgeon and Lecturer at the London Hospital,[1] states "that in one hundred specimens examined, I have never found the posterior surface of the cæcum uncovered by peritoneum; I have never found it attached by areolar tissue to the iliac fascia; and I have not met with one single example of a *meso-cæcum*. I am very much disposed to doubt the existence of such a fold as the last named. Now in every instance that I have as yet seen the cæcum has been entirely enveloped on all sides by peritoneum, and has been free in the abdominal cavity." He also says that the cæcum may be above or below the pelvic brim and that it and the appendix have been found free in the left and other portions of the abdominal cavity. Finally, Treves says: "The relations of the cæcum to the peritoneum are of great interest in surgery and medicine, the part being so frequently the seat of trouble. It has, I notice, been recently proposed that, in certain inflammatory conditions of the cæcum, the gut be reached by an incision from the loin, the incision not to include the peritoneum, but the gut to be exposed at its hinder part, just as the external iliac artery is exposed in the extra-peritoneal operation for ligature. I would take the liberty of stating that such a procedure is anatomically imposible." Such strong statements, from such a source, founded on original work, and not handed down from one text-book to another, disprove thoroughly all theories or statements founded on a few post-mortems of the pathological, or diseased, condition of the parts. The writer does not wish to be understood as saying that abscesses may and do not form, as the result of exposure, injuries, etc., in the iliac fascia, outside of the peritoneum, or within the peritoneal cavity, behind the cæcum and elsewhere, and, by protective adhesions, practically become extra-peritoneal, and so reach the surface. We have similar examples of pus-sacs, formed by limiting adhesions, in the pelvic or pleural and other cavities, yet they are still intra-peritoneal, or intra-pleural, etc., as the case may be, and should be opened, if possible, by direct means, without reopening the cavity from which they originally sprang. Given a case of perityphlitic abscess which can be opened direct, through the loin, and in which we know positively that there is no associated peritonitis, the surgeon would be foolish indeed who would think of giving exit to the pus via the open peritoneal cavity. But how can we feel assured, in the majority of instances, that such is the case?

The danger is, that those who are prejudiced, or unfamiliar with the subject, are inclined to consider these abscesses as almost harmless, in respect to their liability of causing septic peritonitis by contiguity, or rupture into the open peritoneal cavity, and thereby fail to diagnose the peritonitis, which is frequently masked, or realize the true condition, until too late. Even the late Dr. Sands, in his paper first referred to, reports several deaths (from the abscess rupturing in the peritoneal cavity), and yet, in his last paper, referring to the burrowing of these, so-called, extra-peritoneal abscesses, says, "But in no one of these cases does the peritoneum give way;" and, still more strangely, immediately states, in the next sentence, that "when it does, and the contents of the abscess enter the serous cavity, death from acute septic peritonitis is almost inevitable."

In examining the histories of the cases of extra-peritoneal abscesses reported in the various journals it will be seen that among those who survived the delay in operation, and were finally operated upon in from one to two weeks after the commencement of the last acute attack, many did not survive the mere opening of the abscess in the loin. How do the advocates of the late operation account for deaths after the opening and draining of an abscess, not connected with a vital cavity? I think the answer is, that some are nearly dead from shock, septicæmia, or pyæmia at the time of the operation, and the rest die from an infiltrating septic peritonitis, resulting from failure to recognize the true pathological condition and, necessarily, failure to enter the abdominal cavity, break up the adhesions, and wash out the cavity, as Dr. Wylie did so successfully in the case here reported.

In view of the foregoing, it appears to the writer that, as the affections of this region are almost always due to inflammation or perforation of the appendix or cæcum, either recent or remote, and accompanied, with scarcely an exception, by septic peritonitis, there is but one proper method of procedure in all cases not promptly yielding to rest, laxatives, etc., and which are progressive, and that is, to perform laparotomy promptly—not later than the second or third day, if possible—open the abscess, give exit to the offending discharge of foreign bodies, break up all adhesions, and then thoroughly wash out the abdominal cavity, and drain.

The chief reason why this is not the practice of the general surgeons is their fear of opening the peritoneal cavity. In the hands of the gynecological surgeons of to-day this has become an almost daily task, and one in itself practically devoid of danger. The danger, when it occurs, lies not in the laparotomy, but in gross carelessness in performing it, or in the gravity of the disease for which it is performed. Laparotomy for peritonitis from typhlitic diseases is certainly much simpler than when it is performed for the removal of tumors, pyo-salpinx, extra-uterine fœtation, etc., and yet there are gynecological surgeons who have performed some of the latter operations hundreds and hundreds of times without a death, and frequently, too, in cases with associated septic peritonitis. Is it not then fair to suppose that an operation for perforated peritonitis, performed within the first three days of the attack, ought, in at least seventy-five per cent. of the cases, to terminate successfully. Tait[1] reports twenty-six cases of suppurative peritonitis treated by abdominal section, washing out, and draining, and with most excellent results, as he saved eighty-five per cent. of the patients, the most of the deaths occurring in the first few operations. This is a result to be proud of, and I doubt not that, with early operations, whether for abscess or peritonitis, he will improve his record and others approach it.

Excepting for abscesses which approach the loin and in which there are absolutely no symptoms of peritonitis, there can be no question that the incision in the abdominal cavity should either be over the caput coli, as recommended by the late Dr. Sands, or in the median line below the umbilicus, as performed by many others, and not by the usual oblique operation. It is true that "the vertical incision over the cæcum affords the easiest access to the parts presumed to be diseased," but it has several disadvantages over the median operation; first, such an incision, "four inches long, beginning at a point half an inch above and to the outer side of the middle of Poupart's ligament," necessarily involves the cutting of important blood-vessels, etc.; second, it is more likely to result in a hernia; third, if there be extensive adhesions about the cæcum, like in the case reported, there is more danger in wounding the intestines. The median operation enables one to attack and separate the adhesions from their border; it is simpler; there is less hemorrhage; and, finally, it offers better facilities for washing and draining the peritoneal cavity. If necessary, the ab-

[1] See British Medical Journal, March 7, 1885, Lectures on the Anatomy of the Intestinal Canal and Peritoneum in Man.

[1] See New York MEDICAL RECORD, vol. xxxiv., November 10, 1888.

dominal wall may still be punctured over the cæcum and a drainage-tube inserted in the sac by the appendix. As Sands, Weir, and others do not deem it so important, in ordinary cases of perforation, at least, to suture or excise the appendix, the question of seeing instead of feeling the latter is not vital. In the case referred to in this paper it will be seen that the appendix was not disturbed, or sutured, and I doubt not that if it had been torn loose, or meddled with, the result would not have been so good; for though there was a fæcal odor escaping for several days, the fistulous opening closed up promptly. Perhaps this has been a factor in some of the fatal operations. With large openings, or gangrene of the bowel, suturing, or resection, would, as a matter of course, have to be done. The question of suturing the abdominal wound, and draining by tube or leaving it open, is also a mooted point.

The process of draining and healing by open wound is certainly more likely to prove dangerous to the peritoneum, and result in a hernia, than the immediate closing of the wound and drainage by glass tubes; and as the latter is the method (when necessary to drain) that is pursued so successfully by gynecological surgeons, it would seem that it was the better plan. It would appear that all surgeons would agree that the abdominal cavity should be washed out whenever it has been penetrated by septic material; but yet such is not the fact, for Dr. Weir (who was one of the first surgeons in this country to adopt Listerism), in his most valuable article previously referred to, is inclined to think douches dangerous, and when summing up, after referring to the time of the operation and progressing general peritonitis, says "that if pus is thus recognized it should be evacuated, and a drainage-tube inserted without toilet of the peritoneum." Dr. Weir was inclined to attribute an unfavorable effect to the douching, particularly after using the hot water, as recommended by Wylie. He admits, though, that the use of the tube only in the pus-cavity is a less surgically correct procedure. Dr. Weir used the hot abdominal douches, for their stimulating as well as cleansing action, in a case resulting fatally, and noticed a deterioration of the patient's pulse, but adds, "it may have been that the heat was too great, as at first it was sufficient to be decidedly uncomfortable to my hands and those of my assistant colleague, Dr. Bull." He further says that "the patient was much shocked by the operation and died four hours thereafter, with a temperature running up to 105° F. before death," and that "the autopsy revealed nothing of additional moment."

How the death of this patient can be, even indirectly, attributed to hot douching, even with such hot water, I cannot understand, for it was a case of recurring appendicitis, with several perforations, general peritonitis, and partial collapse, operated upon on the fifth day, after having been treated by other physicians, then removed to a hospital and examined under ether, the day previous to the operation. Having seen such excellent effects in a number of instances after hot abdominal douchings of sterilized plain water, I should be very sorry to hear of their rejection as being injurious. Douchings are absolutely necessary, and plain sterilized hot water, while efficient, is safer than solutions of bichloride, etc., in the peritoneal cavity. A valuable point made by Dr. Wylie, and adopted in the case reported, is the filling of the abdominal cavity with hot water, previously to closing the wound, for the purpose of floating the intestines and preventing new adhesions. In using the douche one should use a thermometer, and the temperature of the water be not judged by the hand. For safety, it would appear that a temperature of 105° F. is high enough. In purchasing a thermometer it would be well to test it, for in looking over a choice stock in a prominent drug-store recently, I noticed that there was a difference of 12° F. among several lying in the same atmosphere.

The writer had intended to refer to the needless danger in using an aspirator to make a diagnosis and determine the question and place of operation, but time will permit of merely a brief reference to the fact that Tait and many others condemn it, and state that all laparotomies are more dangerous in proportion to its frequent use. I think the records of the cases of typhlitis, etc., wherein it has been used, will confirm the statement that it was often inefficient, as well as dangerous, and that *the operation was necessary, pus or no pus.* Before closing this paper, the writer desires to refer briefly to the modern method of treating peritonitis, by laxatives and but little or no opium, instead of by the old method of extreme narcosis. Peritonitis, even the so-called idiopathic form, if there be such a thing, is necessarily a serious disease, but when the patient has not only to fight it, but the non-operating opium-poisoner, it means certain death in a large percentage of cases.

Many of us have certainly seen such cases, in hospital and private practice, and which might have been cured by the laxative treatment recently originated, I believe, by the gynecologists. I have seen several instances of general and pelvic peritonitis where it appeared certain that without free catharsis the patient would have died from cardiac or respiratory paralysis, from excessive tympanites, or from septicæmia, in purulent cases.

In the case reported, laxatives had a most salutary effect, not only before the operation, but after it and the accident. It will be seen by the history that there was extensive purulent peritonitis, and yet the tympanites, pain, temperature, and pulse were kept down by frequent doses of salines.

Opium has had its day, as a cure-all, and it seems now only a question of what kind of laxatives shall we use. I have found, with others, that a seidlitz-powder, in divided doses, is useful to allay the vomiting in these cases; but to effect catharsis, one must often give one and a half powder at a dose, or else repeat them in two hours. In either case they are bulky, sometimes rejected, and, unless quick action takes place, they are apt to increase the distress and tympanites. Dr. Wylie adds a heaping teaspoonful of Epsom salts to each powder, as was adopted in this case, while others give larger doses of Epsom salts singly. In several instances of obstructive peritonitis, when seidlitz-powders failed, and there was extreme tympanites, an ounce of castor-oil, given in hot milk, saved the patient, as I think, from certain death. If the salines have no specific action, and the object is merely to drain the peritoneal cavity, or congested blood-vessels, of their septic contents, it would seem as though some of the vegetable cathartics would at times answer better. Aloes and croton-oil have been used by some physicians, but I would suggest Clutterbuck's elaterium, in doses of one-twelfth of a grain, or less, to be repeated in a few hours, if necessary. The quantity is so small that it could readily be taken, and we know that it acts quickly and effectually in general or abdominal dropsies.

The opponents of the open treatment of the bowels fear increased peristalsis and the forcing of fæces, etc., in the peritoneal cavity, but when they recollect that perforation or extreme tympanites usually ends fatally, if not relieved surgically, the objection must fall to the ground. With the bowels thoroughly emptied at the onset of the disease, and the fact that the patient eats little or nothing, laxatives later can only carry off the flatus, which otherwise would escape through the perforation, or compress the lungs and heart, and most likely kill in either case. We use cathartics in the inflammatory intestinal disorders of infants, and in general inflammations elsewhere as a revulsive; then why not in peritonitis with effusion, whether septic or not.

Enemata are useful coadjutors of laxatives, but used alone they relieve but little the flatulence or inflammation in peritonitis. Glycerine enemata have been highly recommended of late, and, judging by the solvent and hydragogic effect of glycerine elsewhere, it should be an improvement on the old turpentine and soap injections. In leaving the subject of laxatives, I cannot do better

than quote from Dr. J. M. Baldy, of Philadelphia,[1] who first refers to the many bad effects of opium, and then says of laxatives: "The peritoneal cavity is drained of the products of inflammation; the inflamed surfaces are relieved of all engorgement by a thorough depletion of the vessels in the intestinal walls; the inflammation is most effectually stopped; the pulse and temperature almost immediately improve, and the pain is relieved as quickly as can be by the use of opium. This may seem strange, but it is a clinical fact."

From a study of this case, personal experience in other forms of peritonitis, and a review of much of the literature of the subject, the following conclusions are suggested:

1. That typhlitic diseases are intra-peritoneal, that in nearly every instance they originate in inflammation or perforation of the appendix or cæcum, usually caused by fæcal impaction or foreign bodies, that even though these diseases frequently do not primarily end in suppuration, still their tendency is to recur and eventually end fatally by septicæmia, or shock from ruptured abscess, or purulent peritonitis.

2. That, in view of the foregoing, all diseases of this region, giving symptoms of inflammation or peritonitis, without regard to the question of pus or abscess, and which do not yield promptly to the modern medicinal treatment and are progressive, should be treated by laparotomy at the earliest period possible.

3. That when peritoneal or intestinal adhesions or pus-sacs exist, they should always be broken up, the abdominal cavity thoroughly douched with sterilized plain water, at a temperature of 105° F., the wounds sutured, and the cavity drained by glass tubes.

4. That, excepting in undoubted cases of simple post-cæcal abscess unaccompanied by peritonitis, the incision should be made either vertically over the caput coli (after Sands), or, in the linea alba, below the umbilicus, and preferably the latter operation when extensive peritonitis or adhesions are suspected.

5. That, whether in operative cases or not, opiates should be used as little as possible; but, on the other hand, saline or vegetable cathartics (followed by enemata) should be used from time to time, to relieve the inflammation, tympanites, pain, and fever, and particularly to drain the peritoneal cavity of serous or purulent effusion.

131 West Forty-eighth Street.

Very Hot Compresses in Surgical Practice.—Professor I. I. Nasiloff gives an account of several cases of inflammation of the lymphatic glands which he treated with marked success by means of very hot compresses (*The Lancet*). These compresses consisted of a fourfold piece of linen, rather larger than the surface over the affected glands. It was dipped into water at a temperature nearly or quite equal to 212° F., wrung out, and applied quickly over the glands, its own temperature being then from 140° to 165° F. These applications were made morning and evening, the compress being allowed to remain on covered over with cotton-wool for about fifteen minutes. As may be supposed, the applications produced somewhat severe pain, but this did not last long, though sometimes not only redness, but a blister was caused. The treatment was continued for about a fortnight. It was found that it very soon began to promote absorption; this action was always accompanied by a rise of temperature, depending apparently upon the size of the diseased glands, and upon the extent to which absorption was taking place. It was noticed that the earlier the treatment was adopted the more effective it showed itself. Professor Nasiloff believes that hot compresses are a valuable form of treatment, not only in strumous glands, but in rheumatic osteo-myelitis and in fungoid inflammation of the joints.

[1] See Medical News, of Philadelphia, for December 8, 1888.

URINARY CONCRETIONS IN CHILDREN.[1]

By J. HENRY FRUITNIGHT, A.M., M.D.,

Fellow of American Academy of Medicine, Fellow of New York Academy of Medicine, Secretary of Pædiatric Section of New York Academy of Medicine, etc.

Etiology.—Though urolithiasis may appear to be relatively an infrequent disease in childhood when compared with the whole number of children living, yet it is of special interest because the greater number by far of all the cases of this description is found among children. It is said that more than half of all the cases of calculus—and the vesical variety is the one especially meant—occur in childhood. Furthermore, when it occurs in children it is most frequent in those under five years of age. Nor are renal calculi so very infrequent in children, for the accumulation of uric acid in the kidney soon after birth may prevent the excretion of urine and may sometimes cause the formation of stones, which are occasionally found in very young infants. Thus Professor A. Jacobi has recorded that six times in forty post-mortem examinations of children under one year of age he has found renal calculi.

According to Roberts, of Manchester, England, of 1,827 persons who underwent lithotomy at various hospitals in England, 473 were under five years of age, and 528 were between five and fifteen years of age, hence more than fifty per cent. of these cases occurred before puberty. Dr. Geo. E. Post, of Beirût, Syria, has tabulated 176 cases of vesical calculus occurring in his practice, and 106 of these were in children under ten years of age.[2]

As in adults, calculi are more frequent in the male than in the female sex. Barthez and Rilliet cite eight hospital cases, of whom six were boys and two girls. Neubauer found but five girls in one hundred cases of the disease.[3] Giraldes asserts that vesical calculus happens twenty-four times more frequently in boys than in girls.[4]

Though the fact is well established that the disease is more prevalent in some regions of the world than in others, as in the warmer zones for instance, yet no portion of the globe seems to be totally exempt from its presence. The negro race, however, is claimed to be remarkably free from calculous disease.

It has been observed that those children in whom calculi are found usually belong to the humbler classes, just the reverse of what obtains in adult life. According to the writings of Sir Henry Thompson half of the cases admitted to Guy's Hospital for operation for stone are children of the poor. He states, too, that it is almost never found among the children of the more favored classes. This has been explained by the fact that in consequence of the coarse and indigestible food of which they partake, and which is chiefly amylaceous in character, the children of the lower classes suffer from malnutrition, which is favorable to the deposition of urinary sediments. As more care and attention are paid to the diet and nutrition of the children of the better classes this cause is not operative in them. The absence of milk as an article of diet is supposed by some to tend to the formation of stone.

Scrofulous and tubercular children have also been considered as predisposed to this affection, and in particular rachitic children are claimed to be remarkably prone to be affected. Of the eight cases of Barthez and Rilliet, already alluded to, four were afflicted with tuberculosis of the encephalon, and one with acute tuberculosis associated with pulmonary gangrene. Vesical calculus has also been announced as among the sequelæ of measles.[5]

[1] Read at the Stated Meeting of the Northwestern Medical and Surgical Society of New York, January 16, 1889.

[2] Transactions of Ninth International Medical Congress, vol. i., p. 610.

[3] Jahrbuch der Kinderheilkunde, 1872, v., Heft 4.

[4] Cyclopædia of Obstetrics and Gynecology, vol. x., p. 192. New York: Wm. Wood & Co. 1887.

[5] Coulson: Jahrbuch für Kinderheilkunde, No. 440, p. 34.

Heredity and family idiosyncrasy also seem to exert an influence in the occurrence of this disease, though by no means constant. A writer in the *London Lancet* for July 10, 1872, on page 204, reports a curious instance of this: "Six children of one family all had stone; the father and mother both passed quantities of uric acid, the grandfather and grandmother, a great-uncle, six uncles, four aunts, and one cousin had either all had attacks of gravel or were cut for stone."

Habits of life and nutrition play quite a prominent part in the causation of lithiasis. Habit naturally plays a more active part in adult life than in children, for the latter have not yet been confirmed in their habits, and it is therefore virtually without influence in early life.

Poor nutrition, already alluded to, favors the occurrence of lateritious deposits because of the abnormal composition of the urine under such circumstances.

The activity of the skin also enters as a factor of some influence in the production of urolithiasis; for the more active the skin is the more concentrated will the urine be, therefore the liability to calculus is increased because this liability stands in direct ratio to the amount of solid ingredients, and especially to the amount of uric acid which the urine contains.

The same general intrinsic causes are equally active in the child as in the adult. The concretion may be deposited in some one of the urinary organs from the unchanged urine because of some inherent vice in its composition. For instance, there may be present an excessive proportion of precipitable ingredients in the urine. The urine may be too acid in reaction, thus diminishing its solvent power over uric acid and the urates. A deficiency of the chloride of sodium and the alkaline phosphates also reduces its power of holding uric acid in solution. Again, an ammoniacal decomposition of the urine in the lower urinary passages is favorable to the precipitation of the earthy phosphates and carbonate of lime. Acid fermentation of the urine with the mucous secretions of the urinary passages assuming the rôle of the ferment, is another cause of urinary concretions. Occasionally children may have a catarrhal condition existing in the pelvis of the kidney which will favor the formation of uric-acid gravel, and which may also lead to symptoms which correspond exactly with those of calculus pyelitis of later life. If this catarrh of the pelvis of the kidney should last a long time it might gradually spread through the ureter to the mucous membrane of the bladder, and as vesical catarrh notably favors the formation of stone, vesical calculi might be developed.

The presence of an abnormal substance of slight solubility in the urine, as cystine or xanthine, predisposes to the formation of calculi. The accidental presence of a body suitable to become a nucleus for the crystallization of urinary sediments, as a clot of blood, inspissated mucous epithelium, etc., or a foreign body introduced from without, as a needle, a piece of wire, a bone, etc., will also give rise to the formation of concretions. I do not, however, know of any case among children which originated in consequence of the introduction of a foreign body from without.

That certain diatheses—as the rheumatic, gouty, or dartrous—exist in children, as in adults, favorable to the occurrence of these urinary deposits is to my mind problematical.

Pathology.—These concretions are most generally formed in the kidneys, whence they often pass into the bladder, where they increase in size and weight, and occasionally into the urethra. They are very seldom indeed formed in the urethra, but if found there they have been almost invariably arrested in their passage from the kidneys. They also may occasionally originate in the bladder. Urethral calculi occur especially in children. As has just been remarked, they are derived for the most part from the bladder or the kidneys, being calculous fragments which have been arrested at the narrowest part of the canal and lodging more especially at the bulbous portion or fossa navicularis. In some very rare instances the concretions may be formed in the urethra. Thus there may be a constriction in the canal behind which the urine may collect and deposit some of its salts—a nucleus is formed, usually of uric acid, and the evolution of a urethral calculus has begun. Again, the arrest of one or more gravelly particles may also give rise to the formation of urethral calculi. Dr. Fewsmith, in vol. xv. of *The American Journal of Obstetrics*, refers to a case of primary urethral calculus in a boy one month old which was apparently of intra-uterine growth.

Concretions may also form just within the prepuce, particularly if the latter be long and tight, and hence they are known as preputial calculi. These calculi may consist of inspissated smegma or of true urinary deposits. The latter variety may either have been formed here in a manner similar to what obtains when a urethral calculus develops *in situ*, or it may have escaped from the urethra into the preputial canal.

In newly born infants uric-acid infarctions are nearly always found in the kidneys. These are insignificant in extent, and they very rarely disturb the renal functions. The opinion which formerly prevailed, that these infarcts of uric acid were found exclusively in children who had breathed, has been demonstrated to be false. Indeed, they have been observed in the kidneys of still-born children, and even in those of the non-viable fœtus.

The presence of these infarctions in newly born infants is explained as being caused by an increased physiological tissue metamorphosis, which is induced after birth by the establishment of the processes of respiration, digestion, and calorification. These infarctions are rarest in those infants who die very soon after birth. They are more frequent in those children who have lived twenty-four hours, and most frequent in those who die between the second and fourteenth day after birth. Then until the end of the second month there is a steady diminution in the number of cases presenting specimens of these uric-acid infarctions, though Virchow has remarked their presence even in the period extending from the third to the fifth month of life. They are to be found, however, only in the minority of the kidneys of the newly-born. In fact, these infarctions are met with in less than fifty per cent. of the newly born infants, which proves that the conditions assuring their production must be inconstant. Concretions have also been detected in the kidneys in fœtal life. Langenbeck has discovered a calculus in the bladder of a six-months fœtus, demonstrating that they may be formed in intra-uterine life.

The calculi met with in children are most commonly composed of uric acid or the urates. Those consisting of the urates, and especially of the urate of ammonia, are most frequently found in nurslings. Ebstein denies the assertion that oxalic-acid concretions are more frequent in children than in adults. He refers to the case of a girl, seven years of age, who passed two large calculi whose kernels were uric acid, though their shells and middle layers consisted of oxalate of lime. If the urine be very concentrated, very hard uric-acid concretions will be produced by the depositions of concentric layers of that substance, and which may vary in color.

Cystine concretions are very rare in children, although Hodann removed a large one of this variety from a boy, six and a half years of age, by lithotomy. Xanthine and fibrine concretions, so far as I am aware, have not been observed in children; nor, according to Heller, have true phosphatic stones or the earthy phosphates been found in children. Carbonate-of-lime calculi, which are so extremely rare even in adults, have never been seen in children. When the concretions are formed in the urethra they are, as a rule, phosphatic in composition.

Renal calculi are usually few in number, but one or two being present. Of the vesical variety, one is generally found, but at times several may be present in that viscus. Erichsen says that he removed from a child, four years of age, a large conglomerate concretion formed of

eleven distinct uric-acid calculi matted together, besides which three others were found free in the bladder. Sometimes a calculus in the bladder is broken, and its fragments become nuclei for other calculi. In the bladder the calculi are generally loose, but they may become fixed by encystment in the sacculi of the vesical mucous membrane.

The size of these concretions in children ranges from that of a pea to a good-sized marble. Quite large calculi are often met with in very young female children.

The weight of a calculus does not depend so much upon its size as it does upon its chemical composition. It may weigh in children from a grain or two to a fraction of an ounce. Recently formed calculi are heavier than older ones, because they retain more moisture. Macnamara removed one weighing one quarter of an ounce from a child four years of age, which is unusually heavy for one removed from so young a patient.

The shape depends upon the structure and the composition of the concretion, though it is usually irregular. Vesical calculi are more ovoidal. When formed in the urethra they are elongated.

The color of a calculus, too, depends upon the chemical nature of the ingredients forming its enveloping crust. Calculi are also said to have a characteristic odor.

Their consistency varies from that of soft sand to that of hard marble, and depends upon their chemical composition, the amount of moisture present in them, and their molecular cohesion. Uric-acid calculi, which, as has already been stated, are the most frequent in children, are hard. In all varieties the outer shell is always the softer portion, while the nucleus is the denser.

Calculi when found singly are usually smooth, but when two or more are found together their surfaces may exhibit facets as a result of their attrition. Their mode of growth is seen in the consecutive deposition of the successive layers of which the concretions consist. I shall omit a description of the processes of chemical analysis of the various urinary concretions, because it does not strictly fall within the line of this paper.

Semeiology.—Though the uric-acid infarcts, which are so frequently present in the newly born, are usually washed away more or less speedily in the first month or two of life, some of the detritus may remain in the tubules and pelves of the kidneys, and by its presence an irritation will be produced which will cause disorder in micturition.

Infants undoubtedly suffer from nephritic colic as well as adults, though such a diagnosis is seldom made. The little one will suddenly become restless, it will then writhe in pain, all the time screaming wildly. After a while these symptoms will subside, and they are obviously relieved with every micturition. The same observations can be made in older children who have constantly recurring violent and apparently inexplicable screaming spells. These attacks depend frequently upon the presence and elimination of gravel and renal calculi.

The little patient suffering from urolithiasis will strain in its efforts to pass its water. There is intermittent urination accompanied by pain. In the intervals the sufferer is serene and undisturbed. In very young children if the napkin be examined it will exhibit dark reddish or yellowish stains, and occasionally gravelly crumbs can be felt. This brown dust is found oftener on the napkins of the puny infant than on those of the robust. The burning caused by the hyper-acidity of the urine is felt not only in the urethra but also at the meatus, the glans, and the labia.

In older children we have to deal more with newly formed concretions or gravel, rather than with infarcted uric acid. In such cases the discharge of urine is occasionally stopped entirely, and only a few drops are voided despite the most severe straining. In some cases retention may last from thirty-six to forty-eight hours with enormous distention of the bladder, extending sometimes even above the symphysis pubis, catheterization being necessary to relieve the patient. In other cases there is a constant trickling of urine from the urethra. The vicinity of the genitals is continually wet, and an odor of stale urine prevails. As a result inflammatory and œdematous conditions of the parts follow. If the urine of children, although clear when voided, lets fall a crystalline deposit before it has completely cooled, as is often seen, there is danger of the formation of a stone.

Older children fall into the habit of pulling and playing with the penis in consequence of the irritation of the disease, and in that manner attempt to relieve their distress. In these boys the prepuce becomes unusually long and developed.

In cases of vesical calculus the symptoms, it is true, depend somewhat upon the size and weight of the stone, but not absolutely. A sudden stoppage of the flow of urine occurs at times. Again, there may be increased frequency of micturition. Hæmaturia, though extremely rare in children, may be present. There is intense vesical tenesmus, with pain in the bladder and penis. The young suffer more from stone in the bladder than adults do. Priapism occasionally occurs. Frequent defecation accompanies stone in the bladder in children, in fact, fæces are often passed at every micturition. As a consequence of the severe straining in which the child indulges in order to pass water, prolapsus ani not infrequently occurs. There is a departure from the normal chemical composition of the urine. The following history illustrates what has been described:

Willie M——, aged two and one-half years, was brought to my office one morning complaining that his urine had suddenly stopped, and that now he could not pass any. I gave him a simple diuretic, but the symptoms of distention of the bladder increased, and I diagnosticated a stone in the bladder. I advised the mother to take the child at once to the hospital, where the diagnosis was confirmed, and on the following day the patient was subjected to median lithotomy, which resulted successfully in the cure of the disease.

If the stone lie loosely in the bladder, the child will, in order to escape its suffering and to pass its urine more easily, lie on the back or on the side, as the force of gravity will cause the stone to fall away from the neck of the bladder when such a position has been assumed. Sometimes, if the stone be free and small enough, and provided it assumes a proper position as regards the relative direction of its longest axis and the long axis of the urethra, the calculus may be expelled spontaneously. Such a case came under my notice last year.

E. S——, aged seven years, complained that at times, when he was urinating the flow would suddenly cease, which was accompanied by pain. Straining did not cause a return of the flow. After he had run about for a time the urine would again be voided. One day when he had retained his urine longer than usual, as he expressed it, "a longish white worm" passed from him. This body was undoubtedly a calculus, which was the diagnosis that had been made.

When the concretion is arrested in the urethra, which happens quite often in boys, the symptoms are mostly mechanical in their nature. Complete retention of urine always occurs. Œdematous swelling of the genitals then ensues. Frequently the calculi can be felt in the urethra by manipulation. Two cases of this description came under my observation within a short period of each other, whose histories I will briefly narrate.

Case I.—G. B——, at the age of two and one-half years, had had an obstruction to the flow of urine. He was examined by Professor Jacobi, who found a stone in the bladder which he removed by lithotomy. When the boy was nearly five years old I was called to see him because he could not pass his water. In examining him I detected under my fingers a hard body in the course of the urethra, about one-half inch behind the corona glandis, and which caused the boy pain when it was squeezed. He was placed

under ether, and by manipulation I was enabled to force it forward to a point within reach of the grasp of a long pair of dressing-forceps, with which the foreign body was extracted. It proved to be a urinary concretion.

Case II.—G. K——, aged three years, was passing water when suddenly the stream stopped and a whitish body partially protruded from the urethra. His parents were much alarmed and sent for me. The case was at once recognized as a urinary calculus impacted in the urethra. It was easily removed from the canal with an ordinary pair of dressing-forceps. Both children were then treated for urolithiasis for an extended period of time, and no more gravel or stones were developed.

If the stone be impacted in the deeper portions of the urethra very serious results often follow. For if the retention of urine be prolonged and relief be not quickly afforded, the irritation may eventuate in abscess, sinus, and urinary extravasation in the perineum, and finally incontinence of urine will succeed the irritability of the bladder.

Diagnosis.—The diagnosis of renal colic in infants is manifestly difficult. It is very likely that often when intestinal colic has been diagnosticated the child is really suffering from nephritic colic. Hence it is proper when a child is very restless and its actions denote pain to examine its napkins for the reddish-brown stain characteristic of urolithiasis. If dysuria be present the napkins should also be examined for the lithic sediment. If small concretions should be found in the diaper or in the urine of older children, it is advisable to explore the urethra and bladder of the anæsthetized patient. Every case of chronic dysuria, whether it be associated with vesical catarrh or not, should be thus examined in order to determine the presence or absence of calculi, as the exciting cause of this continued difficult and painful micturition. The predisposition to lithæmia is only detected after gravel or concretions have actually been found.

When the stream of urine is abruptly checked we may reasonably suspect the presence of a stone either in the bladder or in the deep urethra. But if we are in doubt the bladder should be examined in the usual manner with the sound in order to clinch the diagnosis.

Prolapsus ani in older children is a symptom which should not be undervalued for its indication of vesical calculus as a possible exciting cause. Priapism, too, in small children, should draw our attention to the possible presence of stone in the bladder. The presence of blood in the urine of children should certainly lead us to suspect the presence of calculous disease.

When called to a child suffering from retention of urine always suspect a concretion impacted in the urethra. For in boys the impaction of calculi in the urethra is almost the sole cause of urinary retention. In order to verify the diagnosis a physical examination of the perineum, and per rectum, should be made. Furthermore, in order to test the permeability of the urethral canal, it should be explored with a probe, and thus the diagnosis will be conclusively settled. Finally, error in diagnosis from lack of symptoms is not likely to occur, because in children these are generally more obvious than in the adult.

Prognosis.—The prognosis of this affection is much more favorable in childhood than in adult life. Simple gravel is nearly always cured. Still the uric-acid infarcts of infancy may occasionally be the first cause of a secondary nephritis, this disease being the result of actual irritation or real injury inflicted by the gravelly particles in the urine. The attacks of renal colic always end in recovery. Nor when concretions of appreciable size have formed are they *per se* necessarily fatal. Their direct results may, however, tend to unfavorable complications which will modify the prognosis in special cases.

The disease is more fatal in the male than in the female sex. Dr. William Roberts states that in the nine years from 1857 to 1866, in England and Wales, only 116 deaths among children occurred from calculous disease, which, it must be admitted, is a very small ratio. The rate of mortality of this disease among children is so low because they are usually seen early, and because proper measures of treatment can thereupon be instituted with more hope of success than later in life. Moreover, when operative procedures are resorted to, the prognosis is nearly uniformly favorable, for they are usually pre-eminently successful. Indeed, lithotomy in boys under the age of puberty is, perhaps, the most strikingly successful of all the great operations in surgery.

In regard to urethral calculi, it can be said that, if they are not located in the deeper portions, the prognosis is very favorable. If, however, they be seated near the bulbous portion, then the complications which may possibly attend them render the prognosis more grave, though not necessarily fatal.

Therapeusis.—The treatment of lithæmia in children is, as in adults, dietetic, medicinal, and surgical. In order to diminish the density of the urine, which, it will be remembered, encourages the lateritious deposits, and also to lessen the irritation of the kidneys, considerable quantities of water should be allowed. This recommendation applies as well to young infants as to older children. Parents generally do not seem to realize that the young child can become thirsty, and will require something to slake its thirst as well as older people, for we seldom meet with parents who give their infants water to drink. In older children other aqueous beverages and diluents may be permitted. Also, when from the previous voidance of concretions or gravel we are led to suspect a tendency to the formation of such deposits, we should, as a prophylactic measure, order copious drinking of fluids, the variety of which, whether alkaline or otherwise, must be determined by the chemical composition of the foregoing deposits.

The diet of older children should consist mainly of milk, the white meats, eggs, and farinaceous articles of food. Still the fear of azotized substances should not be carried too far in the regulation of the diet. Our object, in other words, should be to limit but not to restrict the ingestion of nitrogenous foods. Naturally the foods permitted must be easy of digestion.

Warm baths are to be recommended, because of the increased nutritive changes promoted by them. The bowels should be kept free. Whatever induces to an improvement in the general hygienic environment of the patient, including good air, food, clothing, etc., should be strongly insisted upon.

When acute paroxysms of nephritic colic attack infants and children they must be cut short by the exhibition, in sufficient doses, of the weaker preparations of opium, such as the camphorated tincture or papaver syrup.

Medicinal treatment should be directed toward the prevention of the formation of concretions when a tendency thereto is apparent, and toward the solution and consequent facility of expulsion of concretions which have already been formed. Hence it has been designated as the solvent treatment. The solvent treatment consists in the administration of alkalies or acids, according to the solubility of the deposits in alkalies or acids. In carrying out the solvent treatment, when the urine abounds in uric acid and its compounds, which is the usual condition in children, we must bring it up to a certain degree of alkalinity by the continuous administration of alkaline remedies, for these medicines are somewhat slow in their action. Among the alkaline remedies the acetate of potash and the citrate of potash are well thought of. The carbonate and citrate of lithia may also be given, likewise the carbonate of potash. All these medicines should be largely diluted with water in their administration, and the doses apportioned to the age of the patient. The phosphate of soda and ammonia, in doses of from gt. ij. ad gr. v. ter in die, according to age, has also been prescribed with benefit. The phosphate of soda—which also acts well on the bowels of children—benzoic acid, and the benzoate of soda may be given in the same doses.

Nor should the liquor potassæ be forgotten. The alkaline mineral waters, such as the natural Vichy, Bethesda, clysmic, Buffalo lithia, and others may also be recommended. The oxalate-of-lime concretions also demand an alkaline treatment. So long as the urine when voided continues sweet, the alkalies may be given, but should it become ammoniacal, then they must be discontinued lest a deposit of the earthy phosphates occur. The milder diaphoretics and diuretics can also be advised.

In phosphatic deposits the acid treatment is the proper one; but as these deposits are not met with in children its consideration will be dismissed with these few words.

In children these solvent remedies should always be administered per orem. Though vesical injections may be feasible in children, it seems to me that, inasmuch as we can obtain all desired therapeutic effects by the internal administration of the medicines, such injections should be discountenanced. Besides the direct action of these solvents upon the delicate mucous membrane of the child's bladder involves a certain amount of danger to it.

We may conclude, therefore, that the solvent treatment is applicable in cases of simple gravel, and in the early period of the formation of concretions, but that it ceases to be so when the urine becomes ammoniacal, and secondary deposits accumulate on the surface of the stone.

But when the stone, and the uric-acid variety in particular, is of considerable size, the solvent treatment by medicines will avail nothing, and recourse must then be had to the art of surgery. As a detailed description of the various resources which the science of surgery has developed for the cure and relief of these maladies is not embraced in the scope of this article, I will content myself with merely calling attention to certain salient conclusions, which are the outcome of the experience and observation of many distinguished and skilful surgeons.

Neither the operation of nephrotomy, for the removal of a calculus impacted in the kidney, nor the operation for the removal of one impacted in the ureter has ever, so far as I can learn, been done in the person of a child. The question of its feasibility I cannot discuss, but must submit it to the judgment of the surgeon.

In the past the operation of median lithotomy for vesical calculus was preferred for male children, as it gave the best results. For female children, dilatation of the urethra, with subsequent lithotrity, was the chosen mode of operation. Recently pulished reports, however, seem to show that the operation of litholapaxy is growing in favor as a promising operation for both male and female children, and it may in time supplant the two first-named operations for the majority of cases of vesical calculus.

When a concretion has become impacted in the urethra a gush of urine will sometimes force it out. If it remain fixed, the urethra should be dilated, and the offending body should then be extracted with proper forceps. If, however, the stone be of large size and deeply seated, an incision in the urethra may be necessary in order to facilitate its extraction. Care should be taken that it be not pushed back into the bladder. When the concretion has ulcerated through the urethra, incise the resulting abscess, remove the stone, and then treat the wound on general antiseptic surgical principles. The treatment of preputial calculi is so obvious that it does not need elucidation. Yet it may be proper to suggest the advisability of circumcision in certain cases of redundant prepuce, in order to prevent their formation.

161 West Fifty-seventh Street.

The Medical Society of Magdeburg has passed a resolution in honor of Drs. Gerhardt and v. Bergmann, "who so worthily upheld the glory and honor of German science" in their management of the case of the late Emperor Frederick.

Clinical Department.

A CASE OF MEASLES, FOLLOWED BY DEAFNESS, IN A DOG, CONTRACTED FROM THE HUMAN SUBJECT.

By JULIAN J. CHISOLM, M.D.,

Professor of Eye and Ear Diseases in the University of Maryland.

The extension of diseases from animals to man has been often noted, with cause and effect clearly traced. The reverse of the proposition is by no means so frequent, and hence, when a case has its chain of evidence apparently clear, it ought to be put on record. During the present course of lectures at the University of Maryland, one of the students, son of a well-known and highly esteemed practitioner, inquired of me whether deafness in a dog was curable, stating that a favorite setter dog had become deaf soon after an attack of measles, four years since, and had remained so, and that his usefulness as a hunting-dog was altogether destroyed through this infirmity. He told me that his father had recognized the acute disease at the time of its occurrence, and had called attention to the peculiar sickness in the dog before the hearing had become affected. Through this student I requested the father to give me the facts of the case, and obtained from him the following letter, which I think worthy of record:

"Federalsburg, Md., December 11, 1888.

"Dr. J. J. Chisolm:

"Dear Doctor: Some years ago my youngest son had a typical case of measles. Tasso, a favorite setter, was in the room with him most of the time. In about two weeks the dog began to cough, had inflammation of the eyes, fever, and thirst, all the usual symptoms of measles, except the rash. I regret I did not look under the hair for that. He was sick about the time it takes a case of measles to run its course in the human subject. The dog recovered its usual health, but with complete loss of hearing, which he has never regained.

"Yours truly,

"Charles W. Jefferson, M.D."

Littré on the Medical Calling.—Commenting on the Oath of Hippocrates, Littré wrote: "The medical profession is one of the most difficult which man can undertake. Grave responsibility, limited powers, obscurity in diverse cases, fleeting opportunity, the impossibility of retracing one's steps—all forbid him to play with the dangerous 'serpent of Epidaurus.' Add to this the personal risks inseparable from medical study and practice; add to this the incessant contact with suffering and death; add again the scientific training which strengthens and develops the mind; add once more the humane sentiments which direct the practice of an art essentially beneficent—and you will cease to be astonished that a profession so grave has, from a hoary antiquity, inspired a script so exalted in its character as the Oath of Hippocrates. But the Greeks—and this evokes our admiring wonder—the Greeks who, by being the first to introduce the physiological element into medicine which, up to their day, was empirical, have left so powerful an impress on its scientific future, have also been the first—for us denizens of the West at least—to give character to its moral future by formulating on the threshold the duties essential to its practice."

The Blood of Pneumonics.—Dr. Lucatello has observed, in examining the blood of pneumonics, that the serum is absolutely sterile, and he attributed this to the development of a toxic substance from the pathogenic micro-organisms.

Progress of Medical Science.

INTRALIGAMENTOUS TUBAL PREGNANCY; SUCCESSFUL REMOVAL BY ABDOMINAL SECTION OF A LIVING CHILD.—This case is reported by Dr. Joseph Eastman, of Indianapolis, Ind., who claims that no parallel case is on record (*American Journal of Obstetrics and Diseases of Women and Children*). Mrs. C——, aged thirty-nine, bore one child nineteen years ago. Suffered from frequent paroxysms of intense pain and rapidly increasing abdominal enlargement, since her flow stopped last Christmas. She was admitted to hospital on July 9th; operation, July 10th. Abdominal inspection and palpation showed tumor extending from near pubes upward, and to the right, reaching near liver. Conjoined manipulation disclosed uterus normal in size, well up between tumor and symphysis pubis. There was not less than three inches of fat between integument and tumor. Dr. Eastman failed to detect sound of fœtal heart. Breasts not enlarged. Very little discoloration around the nipple. Abdominal section revealed extra-uterine pregnancy, tubal variety. The tube seemed to have much of the right broad ligament surrounding its uterine attachment, as if the tube had been originally beneath the peritoneal fold of the broad ligament. The sac containing the child was a dark purple, and tore open easily on the touch of small forceps. Placenta was nearly under line of abdominal incision, yet the operator was enabled to open sac and extract child without detaching much of its tissue. Any manipulation of sac caused hemorrhage. He determined at once to remove tube and placenta in mass, and began by separating an adherent intestine and then an adherent omentum, being compelled to use pressure forceps and ligate five times before he reached and surrounded the tube with his fingers. By this time there was free hemorrhage from the margins of placenta and tube. He applied Eastman's clamp below the fingers around the neck of the sac, and found by this means he could so constrict as to arrest all bleeding; then cut off above clamp, and using No. 14 iron-dyed silk, quilted the pedicle (which the clamp had made for him) with cobbler's stitch. He washed out the peritoneal cavity with pure water (temperature, 105°) three times, put in glass drainage-tube, and closed wound with silk-worm gut, and found to his great satisfaction that the patient had suffered little shock. Her highest temperature was 102°. Bowels moved on third day, and drainage-tube was removed on fifth day.

The only similar case which he has been able to find is the following, from the *Am. Jour. of the Med. Sciences*, February, 1888. The two cases referred to by J. G. Smith (second edition "Abdominal Surgery") are *not* parallel. In Jessup's case, no tube was removed, and in Martin's case, while the tube was removed, the child was moribund. "At a meeting of the Society of Physicians of Vienna, Breisky reported the case of a woman, aged thirty, who had given birth to a living child six years previous to her extra-uterine conception. She suffered from peritonitis after confinement, and had never been free from pelvic pains. Extra-uterine conception was followed by chronic peritonitis; fœtal movements were perceived at five months, when the pains lessened. Breisky diagnosed intraligamentous tubal pregnancy. On examination by palpation, the uterus could be felt, lying in front of the tumor. By vaginal examination the true pelvis was found to be empty, the vagina drawn toward the left. The tumor was at the right of the uterus, the fœtal parts could be outlined, and the heart-sounds heard. The operation was performed at the end of eight months of pregnancy. After a central incision, the fœtal sac presented in the wound; it was stitched to the abdominal wall by four sutures; at its thinnest point an opening was made and the child was rapidly extracted. It weighed over five pounds, was asphyxiated, but was promptly resuscitated. The four fixation-sutures were then removed; the sac was drawn out, ligated at its junction with the uterus, and removed. Externally the adhesions were but partially broken up, as the sac was adherent to the intestines and omentum. The sac, placenta, and membranes were removed, and the wound drained and sutured. The mother recovered perfectly in three weeks. The sac presented a considerable development of muscular tissue, and seemed mostly developed from the serosa; the placenta was large, and showed adherent lobules. Three weeks after delivery the child died from inflammation of the umbilical vein—a termination not to be ascribed to the operation. Breisky claims that this is the first case of the successful removal of the living fœtus, with all its appendages, in extra-uterine pregnancy. From the consideration of three cases previously operated upon by him, Breisky believes that in advanced cases of extra-uterine pregnancy, when the fœtus lives, we should extirpate the entire sac. To await the formation of a lithopedion is not admissible, as perforation of the bladder or intestine, or septic infection may result."

Under date of January 14, 1889, Dr. Eastman writes that the mother and child remain in perfect health. This case is, therefore, probably unique.

THE RELATION OF ACETONURIA TO DIABETIC COMA.—At a recent meeting of the Royal Medical and Chirurgical Society (*The Lancet*, December 1, 1888) Dr. Samuel West read a paper on this subject. The relation of acetonuria to diabetic coma had been investigated by experiment and by clinical observation, and this paper was a contribution to the clinical side of the problem. The results of experiment were briefly referred to, and the conclusion to which they led. Clinical observation was for a long time difficult from the want of trustworthy tests. A short account of the chief ones was given: 1. Lieben's iodoform test. 2. Gunning's and Le Nobel's modification of it. 3. Reynolds' test. 4. Legal's test with nitro-prusside of potassium. 5. Le Nobel's modification of it. 6. Penzold's test. Legal's test was found to be the most convenient for use in the urine direct, and Lieben's in the distillate, but this reaction was also obtained if alcohol was present. But if the urine gave Legal's, and the distillate both Legal's and Lieben's tests, the presence of acetone might be accepted. As control experiments two series of convalescent cases were examined. In the first thirty cases, a doubtful Legal's reaction was obtained in three. In the only one which was distilled neither test was obtained in the distillate. In the second series of about the same number no evidence of the acetone was obtained in any. Of non-diabetic patients actually suffering from illnesses at the time of examination, acetone was found in fifteen cases. Acetonuria was therefore very rare in healthy or convalescent persons, but common in various forms of acute and chronic disease. Of diabetic patients fourteen were examined, four being at the time comatose. In some of these cases the examination was continued for many days. The following conclusions were arrived at: 1. Acetonuria was common in diabetics without coma. 2. It was not constantly present in cases of diabetic coma. 3. It varied greatly in the same case from time to time without definite cause. 4. It varied independently of variations in the amount of sugar, specific gravity, etc. 5. It might even disappear when coma developed. The iron reaction showed also no relation either to coma or to acetone. Experiment and clinical observation therefore led to the same conclusion—viz., that acetone could not be the cause of diabetic coma. Clinical observation, however, seemed to show that acetonuria had a clinical value as indicating that the patient was in a more critical condition than when it was absent. The symptoms of diabetic coma depended, in all probability, upon acute intoxication by some substance rapidly generated within the body, but at present unknown. It might be that in the perverted chemical processes which developed it, acetone and the allied body giving the iron reaction were pro-

duced, so that the presence of these bodies in the urine might serve as "danger signals." In discussing this paper Dr. Maguire said that acetone was evidently not the poison which produced diabetic coma; nevertheless, the condition was undoubtedly due to the presence of a poison. The liver either might split it up or the kidneys eliminate it, so that, although it might be found in the blood, serious symptoms might not develop. He looked upon the presence of albuminuria as a valuable danger signal when occurring in the course of diabetic coma, its presence being probably due to renal irritation. In every case he had examined the kidneys had presented extreme parenchymatous inflammation, and such a condition could be brought about by the injection of diacetic ether or acetone into the blood. He thought that, if albumen were found after acetone had been ascertained to be present, the case was graver than if acetone were found alone.

THE THERAPY OF TABES DORSALIS.—Stembo (*Berliner klinische Wochenschrift*, October 29, 1888) says that though so much is written concerning tabes, yet but little appears as to its treatment. This is because it is so generally considered to be beyond the reach of treatment, though many well-known writers have shown that at least some cases prove that it is not incurable. The author has had under his care thirty-nine cases of tabes in the last few years, and has reached the conclusion that the sooner treatment can be begun the better result may be expected. Syphilis is certainly a prediposing, if not a proximate, cause of tabes, and yet this fact seems to be of little value in the therapeutics of the disease. Twenty-four of the thirty-nine cases were distinctly syphilitic, but not one of them was benefited by antisyphilitic treatment. Iodide of potash has never helped his tabetic cases, and he has likewise obtained no good results from arsenic, belladonna, ergot, and strychnine. He has found antifebrin in full doses very serviceable in relieving pain, and decidedly superior to both antipyrin and phenacetin. Cocaine was often useful in gastric crises. Great difference of opinion exists as to the value of hydrotherapy, and what form of it is to be employed. The author believes that the bathing resorts with warm baths are preferable in the early stages, especially when the patients are anæmic and weakly. In the more advanced states, in strong individuals, in whom an increased blood-supply is desired, the cold-water cure may be tried. Care must be used, however, that it is not overdone, and cold sea-baths especially must be given with the greatest caution. Electricity is by all means the best treatment for tabes, yet it must be employed with precision, and not by the patients themselves. The constant current has been the one chiefly employed in Germany, England, and Russia, while the interrupted current is also used in France and America. Carefully describing his methods of applying it, the author says that he uses in some cases the constant current applied to the back, followed by the faradic current, or by franklinic electricity applied to the same locality. In other cases he employs the galvanic and faradic currents simultaneously, in the manner described by De Watteville. He reports three cases as examples of the surprising improvement which can follow electrical treatment.—*The American Journal of the Medical Sciences*, January, 1889.

THE PREVENTION OF TYPHOID FEVER.—Dr. Reed has formulated (*Sanitary News*) the following conclusions relating to typhoid fever: 1. Typhoid fever is caused by the introduction of a specific germ into the alimentary canal. 2. This specific germ multiplies in the alimentary canal, and in turn is thrown off in the stools of the patient. 3. Its vitality is much greater than at first supposed, resisting a variation of temperature ranging from even below the freezing point to 133° F. 4. The germ may be communicated from one person to another, by water, milk, foods, and air. 5. To prevent its spread, all the dejecta should either be burned at once (which is preferable), or thoroughly disinfected, by throwing them into a pot of boiling water and thoroughly cooking them, or using some effective germicide, such as a strong solution of the bichloride of mercury in sufficient quantities to insure their destruction before they are buried, which should be at a sufficient distance from any neighboring water-supplies to insure their freedom from contamination. 6. If the water-supply is of a suspicious character, thoroughly boil it before using, and then place it where there is no possibility of its becoming infected. If ice is used, pack it around the water-vessel, not allowing the melted ice in any way to enter your drinking-water.

OÖPHORALGIA TREATED BY INTRA-UTERINE FARADIZATION.—In the experience of Dr. Everard, of Mons, this affection is usually accompanied by what are considered hysterical symptoms (*The Lancet*). The patients are as a rule young girls, and they complain generally of violent and frequent headaches, buzzing in the ears, exaggeration of the olfactory and gustatory senses, ocular troubles, loss of memory of words, anæsthesia and hyperæsthesia of different parts of the body, capricious appetite, bad digestion, irregular bowels, and cough more or less frequent, for which no reason can be found on examination of the chest. The treatment hitherto has been chiefly symptomatic, and has not been very successful. Dr. Everard has of late, however, employed Apostoli's method. He uses a bichromate of potash faradization apparatus, to which is connected an Apostoli's bipolar rheophore containing the two currents, which are separated by a thin piece of gutta-percha. This sound is introduced either into the vaginal fornix or into the uterus itself. The coil is so arranged as to supply currents predominating in tension or in quantity at will. Care must be taken to increase the strength very gradually, and to diminish it the moment the patient complains of pain. The greatest cleanliness is required, antiseptic injections being used before and after the sitting. Dr. Everard gives some cases where some half-dozen faradizations produced a great change for the better in hysterical patients with enlarged and tender ovaries.

A NEW OPERATION FOR TORTICOLLIS.—Dr. Levrat has devised a new method of treating torticollis. Instead of operating subcutaneously, he cuts down upon the sternal tendon of the sterno-mastoid muscle, effected by a longitudinal incision two centimetres long. He clears the tendon with the forceps, passes a grooved director under it, and divides it. He then divides any tissue that may bind down the muscle at that spot, sutures the wound, and dresses it antiseptically with iodoform and gauze. Over the dressings he places the following apparatus: The head being enveloped in cotton wool, a silicated bandage is wound horizontally around it at the level of the forehead, and a similar bandage vertically over the crown and under the jaw. Where these bandages meet at the level of the mastoid process on the sound side, a small hook, with the concavity looking upward, is inserted. Another silicated bandage is wound round the body below the axillæ, and through the thickness of the bandage a hook is inserted in the middle line in front, having its concavity looking downward. When the bandages have dried, the two hooks are connected by a band of india-rubber, which assists the sterno-mastoid of the sound side to keep up a continuous traction and so correct the deformity. This apparatus and the dressings are left untouched for fifteen days, and the success of the operation is said to be assured.—*The Lancet.*

SWEATING OF THE FEET.—Dr. John Morgan writes: "By applying boric acid thoroughly to the feet, particularly about the nails, between and under the toes, and to the soles, two or three times a week, or oftener, as the case may be, dressing them while there is a good coating of powder on the skin, sweating of the feet may be effectually relieved. The application is easily made and will prove very satisfactory." Washing before and after might help!

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THE MEDICINAL TREATMENT OF MENSTRUAL DISORDERS.

THE treatment of symptoms alone, without regard to the underlying condition, of which the symptoms are but the expression, is often looked upon as unscientific and unworthy of the consideration of the true physician. It is, indeed, unscientific, and were it possible always to discover and remove the cause it would be equally irrational and unjustifiable. But unfortunately we are unable always to act upon this principle. We cannot always discover the cause, and, knowing or suspecting it, we are often unable to remove it. This is noticeably so in regard to menstrual irregularities, especially as occurring in young women. The general practitioner is often asked to relieve cases of this nature in girls who would never submit to an examination or operation, preferring rather to suffer pain indefinitely than the shame of a physical investigation into the nature of their trouble. In such cases the physician is forced to try the effect of medicinal agents, groping, it may be, in the dark, before insisting upon an examination. Such being the case, it is well to learn what remedies have been found to be of occasional service in relieving symptoms of this nature which are not dependent upon actual organic disease.

In a very practical paper, read before the Connecticut Medical Society at its annual meeting in 1888, Dr. Gideon C. Segur, of Hartford, presents a general review of the subject, giving the results of his own experience and quoting the opinions of several prominent gynecologists whom he has consulted. A brief *résumé* of these opinions is all that can be presented here, the reader who may desire a more extended presentation of the subject being referred to the orginal paper.

Amenorrhœa.—For this condition most of the authorities consulted recommended general tonics, iron, arsenic, and cod-liver oil. Permanganate of potassium, which was at one time so strongly recommended, does not seem to be in much favor, the objection to it being that it is too irritating to the stomach. Manganese was advised by some, and this is the remedy that the author has found to give the most satisfactory results. Most of the salts of this drug, however, cause so much gastric irritation that they cannot be used in most cases, but the binoxide seems to be an exception in this respect, Dr. Segur having used it in many cases with the happiest results and without seeing any disagreeable effects caused by it. A disagreeable feature of this remedy, in Dr. Mundé's experience, though apparently not in the author's, was its unreliability. It might afford relief at one time, and yet at another, even in the same case, and seemingly under the same conditions, it would fail utterly to bring on the menstrual flow. The lactate of manganese is also free from the irritating action upon the stomach that most of the other salts of the drug exert. Manganese has the reputation of being an abortifacient, hence some caution is necessary in its use as an emmenagogue. But the maximum dose employed by the author is six granis a day, and this is far below that which has been used to produce abortion.

Dysmenorrhœa.—The opinions of the authorities consulted by the author concerning this symptom and its relief were most varied. Some thought no benefit could be obtained by any but operative measures, while others spoke hopefully of many remedies. Among those which seemed to have given most satisfaction to the writers were pulsatilla in three- to five-drop doses three times a day; cannabis indica, viburnum, camphor, belladonna, and antipyrine. Dr. Segur found manganese to render good service in these cases also, in many instances. The binoxide was used in doses of six grains per diem. The application of heat, by means of the sitz bath or douche, was a useful adjuvant to the internal medication.

Menorrhagia.—For this condition the most efficient remedies were found to be ergot, hydrastis, digitalis, sulphuric acid, fluid extract of gossypium, and gallic acid.

It is rather strange to find such a want of unanimity in the recommendations of these different authorities concerning the most efficacious medicinal agents for the relief of menstrual disorders. It is rather discouraging, also, as the number of remedies vaunted as useful in any particular trouble is generally in inverse proportion to its amenability to treatment. Yet, notwithstanding the discouragements which those who attempt to treat menstrual disorders by drugs often encounter, the physician is many times powerless to treat them in any other way. Dr. Segur has, therefore, rendered good service in collecting the opinions of so many experienced gynecologists, and in giving the results of his own efforts to relieve sufferers of this class, and we hope that the paper will be useful to many who may perhaps be able occasionally to cure some of these disorders by one or other of the remedies mentioned by the author.

PROPOSED PUBLIC BOTANIC GARDEN IN NEW YORK.

THE Torrey Botanic Club, of this city, has recently sent out an "appeal for a public botanic garden in New York City," which commends itself—not only especially to the class whom they hope to interest—but to all good citizens. The amount of money required to establish and maintain a botanic garden is so large that the members of the club have very wisely realized that the possibility of receiving such a fund by subscriptions of small amounts from the general public is too slight for consideration. From the earliest times botanic gardens have originated almost wholly from the public spirit of wealthy individuals, as, for instance, that of Matthæus Sylvaticus, at Salerno, in 1309; the one established in Padua, by a wealthy Tuscan nobleman; the public botanic garden of Leipzig, founded by the elector of Saxony, in 1580; the

one at Oxford, established by the Earl of Danby, in 1632; and the private botanic garden of Dr. Balfour, established in Edinburgh, about 1680, and subsequently assumed and carried on at the expense of the University.

The various governments of Europe have long taken an interest in the establishing and conducting of botanic gardens, beginning, perhaps, with the one established by Venice, in 1333; the celebrated Jardin des Plantes, in Paris, founded by Louis XIII., in 1610; the noted Kew Gardens, under the care of the Britith government; the Botanic Gardens at Berlin, and numerous others, all of which have rendered decided service, especially to the medical sciences, in the acclimatization of useful plants and fruits, and have been an unending source of interest and education to the people. The number of educational institutions, colleges, universities, libraries, hospitals, etc., which have been endowed, during the past quarter of a century, by the wealthy men of America, is very large; and the possessor of large means, who would confer a benefit upon his country and erect a monument for himself, by devoting a suitable endowment to some public service, must find his range of choice much limited, and the suggestion is not untimely made that, in the direction of a public Botanic Garden, a new and most useful benefaction may be conferred. The appeal issued by the Torrey Botanical Club tersely states several special uses of a botanic garden. That especially one which is interesting to the medical profssion is as follows:

"Students in medicine and pharmacy approach the study of botany with a particular object in view. Plants of medicinal value have for them a special importance. With ample means at command, it would be easy to obtain an abundant representation of plants of this nature, without prejudice to the purely scientific character of the garden, thus securing for the institution the highest degree of pharmaceutic usefulness, and making it a valuable auxiliary to our medical schools."

It is in this connection that we particularly desire to commend it to our readers. It is not desired by the Torrey Club that their appeal should be considered in the sense of a specific request for money, but rather of the presentation of an opportunity for a man of wealth to do himself an honor, and at the same time a great and lasting service to the public and to the cause of science. But few members of the medical profession are financially able to render themselves immortal in this way, but from the nature of their relations to their patients they are, perhaps, in a better position than most to suggest to some wealthy friend or patient the unique opportunity this scheme for a botanic garden in the city of New York presents.

Copies of the address may be obtained from Mr. E. F. Stern, 23 Union Square, who will also furnish any further information that may be desired.

ANOTHER CAPITAL OPERATION MADE SAFE.

IN 1864 Professor Gross referred to the operation for extirpation of goitre as "horrid butchery." Up to that time the mortality from the operation was over forty per cent. In the century from 1771 to 1875 the mortality, according to Welch, was 25.48 per cent. In the third quarter of the present century, 1850 to 1877, the mortality fell to 19.4. In 1882 the average mortality was 13.9 per cent., though in the next year Liebrecht published a table showing a reduction of mortality to 8.3 per cent.

Professor Theodor Kocher, of Bern, in his first series of fifty-eight operations, published in 1882, reported a mortality of 14.8 per cent. Two years later he reported forty-three more cases, with a mortality of 6.9 per cent. Five years later, that is to say in the present year, Kocher reports a list of two hundred and fifty more goitre extirpations with only six deaths, giving a mortality rate of only 2.4 per cent. Of these cases twenty were for malignant disease, and here the mortality was fifteen per cent. (three deaths). Of five cases of Basedow's disease, one died. Leaving out these cases, and including only simple goitrous enlargements, the mortality is reduced to two, or 0.8 per cent. One of the cases died from ether, and the other was moribund when the operation began, so that Kocher now claims that the operation for non-malignant goitre is free from danger, and can be safely done even for a cosmetic effect alone. Kocher's results add another to the long list of triumphs of modern surgery.

It is not to be forgotten, however, that such a low rate of mortality does not represent as yet the results of surgery in general. It is a special achievement that has followed upon the natural skill and extraordinary opportunities of Kocher. There will come a time, however, when most good surgeons can get nearly the same results as those attained at Bern.

DEFEND YOURSELVES FROM TYPHOID FEVER.

UNDER this title Professor Carlo Ruata, of Perugia, gives a striking account of the prevalence of typhoid fever in Italy. Every year, he says, this disease attacks from two hundred thousand to three hundred thousand individuals, and causes a mortality of twenty-seven thousand seven hundred. One-third of the persons in Italy who reach the age of forty-five are attacked with typhoid fever. In several districts over three per cent. of the inhabitants die from the disease annually.

The extraordinary prevalence of typhoid fever in Italy can be better realized by a comparison with the rate in this country. Massachusetts, with a population of two millions, has annually less than one thousand deaths from typhoid fever. Italy, with a population fourteen times as great, has twenty-seven times more deaths from this disease.

It is inexcusable that civilized states at the present day should allow a disease relatively so controllable to make devastations such as those in Italy. Well may Professor Ruata exclaim, "Defend yourselves from typhoid fever."

THE GROWTH OF ATHLETICS.

THERE is no more favorable sign of the times than the growing popularity of athletics. As the nation grows more wealthy, and luxurious habits develop, invalidism tends to increase. This is offset in a measure by our better knowledge of how to live and how to train the rising generations. No amount of physical culture can take the place of regular habits and temperate living; but it can do a great deal in showing how the delicate can be made robust, and how much more enjoyable existence is

when one has firm muscles, good digestion, and a clear brain.

Dr. W. G. Anderson, of Brooklyn, in a recent lecture has given some figures showing the amount of money that has been spent, mostly in the last few years, on athletics and gymnasiums in this country.

The colleges, he says, have spent $750,000 in facilities for the instruction of gymnastics; the preparatory schools, $250,000; the athletic associations in this city and vicinity, quite $750,000; the German Turnvereins, $2,500,000, and the Young Men's Christian Associations nearly as great a sum.

We are still, however, much behind European nations. Berlin, in 1881, had 70 gymnasiums, which cost $50,000 to maintain; Frankfort spent $27,000 a year on 18,000 children; Vienna, $34,000 for 135 schools, with 72,000 scholars. In Prussia the gymnasium was used by one-fifth of the population.

Dr. Anderson gives a hint to young physicians by saying that the services of a physician who was also a good gymnast were at a premium in hundreds of schools and colleges throughout the country, where they might receive salaries far in excess of any probable earnings in their profession.

News of the Week.

Dr. Daniel L. Everitt was found dead in bed at his residence in Brooklyn, on the morning of January 25th. He had been suffering from rheumatism in his chest for some time, and it is supposed endocarditis ensued. Dr. Everitt was sixty-six years of age, and a native of Modena, N. Y.

Death of Dr. Charles Bliss.—To the long list of sudden deaths in our profession another was added last week. While going down cellar the stairs collapsed, and Dr. Bliss fell to the floor, striking his head. Though not unconscious at first, he speedily became so, and died within an hour. Dr. Bliss was a native of Lee, Mass., and was forty-eight years of age. At the outbreak of the rebellion he enlisted in the cavalry. He was honorably discharged before the war terminated, and began the study of medicine. He was graduated at the Berkshire Medical College in Pittsfield, Mass., in 1865, and, coming to this city, became associated with Dr. N. C. Husted. Dr. Bliss met with success as a physician, and accumulated a large fortune. He was a member of the County Medical Society, the Society for the Relief of Widows and Orphans of Medical Men, a Mason of high degree, and an officer in the Order of Foresters.

Dr. John W. Underhill, of Cincinnati, died last Monday from the effects, it is said, of cocaine. A few years ago he began experimenting with the drug, and became a hopeless victim, although he was a man in fine health and a physician of excellent standing.

The Largest Medical Society in Germany is the Berliner Medicinischer Gesellschaft, which now has seven hundred and thirty-six members. At its recent annual meeting, on January 9th, Professor Virchow announced that the New York Medical Society had contributed the sum of 1,000 marks to the Langenbeck memorial fund.

Dr. Franz Steinhausen, a well-known German physician of Utica, died on January 28th, aged fifty three years.

The Eighth German Congress for Internal Medicine meets at Wiesbaden on April 18th, under the presidency of Professor Liebermeister.

Medical Missionaries.—The Rev. Dr. Taylor, of the Broadway Tabernacle, preached last Sunday on the subject of medical missions, with special reference to the International Medical Missionary Society of this city. He warmly commended the work of the International Society, established in 1881 by Dr. Dow Kontt. It had grown from a dispensary in the Fourth Ward to seven in this city and Brooklyn. Nearly 70,000 attendances have been given to sick poor, and sixty students were trained last year.

The Supreme Court on the Question of the Regulation of Medical Practice by the State.—An important decision has been rendered by the Supreme Court of the United States, supporting the right, claimed by the State Board of Health of West Virginia, to make rules for the regulation of the practice of medicine. The statutes of that State enact that every practitioner must qualify himself for legal practice by obtaining from the Board a certificate that he is a graduate of a reputable medical college, or has been ten years in the State engaged in practice, or that he has passed a satisfactory examination before the Board. A practitioner named F. M. Dent, having been convicted of illegal practice, carried the case up to the State Court of Appeals, and thence to the United States Supreme Court, asserting that the law was unconstitutional, inasmuch as it deprived him of liberty and property without due process of law.—*Medical News.*

A State Board of Health for Florida.—The Governor of Florida has called an extra session of the State Legislature for the purpose of establishing a State Board of Health.

The Bacillus of Yellow Fever.—In a pamphlet embodying his remarks on the etiology of yellow fever, made before the Association of American Physicians, Dr. Sternberg shows that bacilli claimed to be germs of yellow fever are in reality identical with the bacillus of Emmerich, and the bacterium coli commune of Escherich. These are micro-organisms found in healthy intestines.

The Alabama Medical and Surgical Age, is the title of a new monthly published in Anniston, Ala., and edited by Dr. John C. Le Grand.

Les Archives de Médecine Expérimentale et d'Anatomie Pathologique is the title of a new journal, to appear bi-monthly, and edited by MM. Charcot, Grancher, Lépine, Straus, and Joffroy. It is to cover about the same ground in original work as Virchow's Archives.

Child-labor.—Mrs. Amelie Rives-Chanler is reported to have offered a prize of $100 for the best essay on child-labor.

Whooping-cough.—Dr. Guerra Y. Estape, according to the *New Orleans Medical and Surgical Journal*, December, 1888, regards the local application to the larynx and pharynx of a ten per cent. solution of resorcin as the best treatment of whooping-cough at present known.

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.—We remind our New York State readers that the State Society meeting will be held at Albany, commencing February 5th. A large number of papers are already promised, and special arrangements have been made for their reading and discussion by assigning them to medical and surgical sections. The fare, as already announced, has been reduced via Hudson River Railroad.

NEW YORK CANCER HOSPITAL.—There is a vacancy on the house staff of this hospital. The term of service is one year. Time begins December 1, 1888, and to one going in now could be dated back if desired. The service is large and of increasing interest, including all forms of cancer in women. Apply to Dr. James B. Hunter, 2 East Thirty-third Street, for particulars.

THE PROTECTION OF AMERICAN PHYSICIANS.—A correspondent of our virile and patriotic contemporary *America*, writes to that journal regarding the subject of "Discrimination against American Doctors." He says: "Nine-tenths of all the quacks and charlatans in this country are foreigners. They bring with them certain papers which are called diplomas. Some of them are granted by institutions which would not be recognized if existing here, but such is the reverence which certain Americans have for any foreign parchment that these diplomas are received without question." Quoting Dr. Meany in the *Inter-Ocean*, he adds: "In concluding, I beg to say, a diploma from no matter what medical college in the United States is not recognized in England; whereas, any qualification from England, in nearly all the States of America, appears to be sufficient to entitle the holder to practise medicine, surgery, midwifery, etc., without an examination of the branches of medicine or surgery he failed to pass upon in England, and without a qualification so to practise."

LEPROSY IN NEW YORK.—A correspondent asks if there are any cases of leprosy in New York. We would say that we know of at least one case. Some time ago there were a few cases in the public hospitals, and probably these are still in the city.

THE VIRGINIA MEDICAL EXAMINING BOARD AND THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.—Dr. Peter D. Keyser, Dean of the Faculty of the Medico-chirurgical College, writes us regarding the report copied in our columns, that three graduates of that College came before the Virginia Board and all failed. Dr. Keyser says that, instead of three persons going before this Board there was only one, and he went up three times. This gentleman passed a good examination before the Faculty, receiving an average of 85.05 out of a possible 100, the minimum mark of those allowed to pass being 70. Dr. Keyser sends us a copy of some of the examination papers which were submitted to the young man in question. These show that the standard required of graduates is a good one.

WAR TO THE KNIFE.—The quiet valley of the Ohio, the whilom home of Aaron Burr, has been surprised by a challenge. This is issued by Dr. R. Stansbury Sutton, of Pittsburg, to Dr. E. S. McKee, of Cincinnati. Dr. McKee made a visit to Paris, and returned an apostle of Apostoli, the father of the treatment of fibroid tumors of the uterus by electricity in strong and accurately measured doses. On several occasions since his return he has written concerning this subject, and, at a recent meeting of the Cincinnati Academy of Medicine, spoke of it as an "efficient substitute for the knife, which has been so generally feared in cases of fibroid tumors of the uterus." Dr. Sutton, who has a private hospital and belongs to the Tait school of gynæcologists, bitterly opposes this method, and publishes a challenge to Dr. McKee, in which he offers to furnish him with three patients suffering from fibroid tumors of the uterus, furnish all the apparatus necessary, and support Dr. McKee and the three patients in his private hospital, and for each tumor removed give the doctor $1,000; time limited to one year. In case of failure Dr. McKee is to be the loser. Dr. McKee accepts the challenge, provided all the conditions remain the same, except that the contest take place in Cincinnati instead of Pittsburg, not feeling justified in relinquishing his practice for six months or a year for the inducements offered.

PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE.—S. Weir Mitchell, M.D., LL.D., has been elected Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and College for Graduates in Medicine, an additional chair upon that subject being created.

THE MORALITY OF CANNIBALISM.—A writer in the *Fortnightly Review* denies the immorality of cannibalism, and thinks that a good way to dispose of the defective, aged, and dependent classes would be to eat them. The expense of burial would not only be saved, but there would be an immediate and important contribution to our food-supply. This idea was fully set forth by an American writer some years ago, who showed that cannibals were, as a rule, a high type of the savage, and that their diet had a scientific and economic basis of justification.

SLEEPING IN CLOSED ROOMS.—A Buffalo physician, in discussing the subject of "colds," has lent the weight of a medical name to the view that people should sleep with closed windows when the external temperature is below 65° F. Such advice is calculated to do much harm. While no one now advocates the practice of sleeping in very cold rooms, there is no doubt that much discomfort and ill-health would result from sleeping in rooms having no direct communication with the outside air.

ARSENIC IN THE HOME.—Mr. A. W. Stokes (*London Chemical News*) has examined a hundred samples of imitation Indian muslins and cretonnes. He found that twenty-three per cent. contained arsenic in appreciable quantities. The highest proportion, 2.1 grains of white arsenic per square yard. The colors in which arsenic was principally present were the terra-cotta reds and the greenish-browns. Of the wall-papers submitted to Mr. Stokes by various manufacturers, ten per cent. were found to contain arsenic. Thirty other articles of household use, such as plushes, velvets, carpets, mats, silks, etc., were examined, and in only one sample—a little flax mat of green color—was arsenic found.

A STERILIZING INSTITUTE has been established at Vienna. It has no gynæcological wards, however, and its object is to sterilize milk, not women or men.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PRACTICE OF MEDICINE.

Stated Meeting, January 15, 1889.

R. C. M. PAGE, M.D., CHAIRMAN.

ELECTION OF OFFICERS.

DR. R. C. M. PAGE was elected Chairman, and DR. G. R. ELLIOTT, Secretary, for the ensuing year.

DR. SCHUMAN LECLERCQ, of Carlsbad, Austria, read a paper (see p. 113) on

THE INFLUENCE OF CARLSBAD WATER ON URIC ACID EXCRETION.

DR. FESSENDEN N. OTIS said he had listened with great pleasure and interest to the scientific researches concerning Carlsbad water recorded in the paper, and that he rose more particularly to say something of his own impressions concerning its therapeutic value as gained from a course of treatment in his own person at Carlsbad during the past summer, from his observations of the effect of the water on the different classes of cases which he had seen there, and from the results obtained from it in various patients whom he had sent to Carlsbad in previous years.

He had been in the habit of assuming for a long time past, from what he had noticed of the Carlsbad cure, that individuals suffering from troubles due to functional obstruction of the liver, and those with uncomfortable accumulations of adipose tissue, are most likely to be benefited by it; and his experience with regard to it had been exceedingly gratifying. In those affected with biliary calculus the action was very prompt and efficient, and as far as he had been able to judge, its use was attended with permanent benefit. Cases under his care, in which all the ordinary methods of treatment failed, have, after a course at Carlsbad, been entirely relieved. It was usually advisable, however, for such patients to spend two or three consecutive seasons there. In several such cases that he recalled there had been no return of the attacks after the lapse of four or five years. Dr. Otis described with considerable detail the case of a gentleman, sixty-five years of age, suffering from aggravated liver, the results of high living, whose condition, notwithstanding the fact that for two years he had been most abstemious in his habits, and in spite of all treatment, gradually grew worse and worse, until he was taken, in a very weak state, to Carlsbad, when he immediately began to improve. At the present time, at the age of sixty-nine or seventy, he was apparently one of the healthiest men in the city of New York; and so decided had been the effects of the Carlsbad treatment that, since taking it, he had been able to resume habits of life which are simply astonishing in a person of his age. The same results, he said, he had seen in repeated instances under his observation.

That which decided him to try the Carlsbad treatment himself was the existence of gout, and what he supposed to be gouty dyspepsia, which was attended with more or less mental hebetude and an inability to attend properly to his usual professional work. While at Carlsbad he daily took, at short intervals in the morning, five seven-ounce glasses of the water at a temperature not exceeding 80° F. The regimen to which he was subjected involved the avoidance of starchy food, but allowed a sufficient amount of nourishing diet; and he took two glasses of claret a day. Although using only a very moderate amount of exercise, he lost one pound a day for thirty days, and among the results produced by the treatment was a considerable loss of strength. He experienced more or less debility for a month after leaving Carlsbad, spent principally in Switzerland; but he gradually improved in flesh and strength, and at the present time he enjoyed an amount of freedom from dyspeptic trouble which he had not had for a number of years. His own experience was also that of a good many other individuals with whose cases he was well acquainted.

Aside from the diet, and the regular habits imposed upon those taking the treatment at Carlsbad, he believed that there was something in the water which tended to the elimination of effete material from the system. This was what was needed in the class of cases under consideration, and, in general, he had found that those remedies which produced this result were the most valuable. Thus, mercurials were of very great service, and patients with the uric-acid diathesis were immediately benefited by their regular administration. In such cases, from one to three grains of calomel a day could be taken for a considerable time with great advantage and without producing any deleterious results.

THE CHAIRMAN said that individuals who had too much fat, and those who had an excess of uric acid, would derive the greatest possible benefit from the course at Carlsbad; but for those suffering from Bright's disease, or pulmonary trouble, or from any grave depression of vitality, it was only attended with evil. He had, however, expressed his views on this subject very fully in a paper published in THE MEDICAL RECORD in October, 1886, and would not go into any details on the present occasion.

DR. WILLIAM H. THOMSON read a paper on

AUTO-INFECTION FROM GASTRO-INTESTINAL FERMENTATION.

He said that in the outset he would relate some cases in which auto-infection resulted in the production of serious nervous troubles, and then make these the text upon which to base some general remarks on this subject.

CASE I.—This was a lady, fifty years of age, the subject of Graves' disease. She had been suffering from diarrhœa all summer, and was affected with excessive nervousness. The enlargement of the thyroid and the exophthalmos were slight. There was no albuminura, and no casts in the urine. In spite of all treatment she continued to grow worse, until, finally, she was placed upon an exclusive diet of Arabic fermented milk. No medicine was taken, except some bismuth and pepsin powders. Under this treatment she rapidly improved, and at the end of two months she was practically well. She then returned to a mixed diet, but finding that the diarrhœa came back, resumed the fermented milk. After a time, however, this became so distasteful to her that she was unwilling to continue it any longer. Professor Thomson then treated her for a year, and at the end of that time he found the condition greatly aggravated, the exophthalmos and enlargement of the thyroid having increased very much. Fermented milk now had no effect, and after a time she died very suddenly. It would seem, he said, that in this instance the milk for a time arrested Graves' disease, and in other cases he had acted on the same basis.

CASE II.—This was a gentleman of leisure, thirty-five years of age, suffering from dyspepsia and hypochondriasis. His chief trouble was palpitation of the heart and a rapid pulse (the beats never being less than 120 to the minute), though there was no organic cardiac trouble. The patient was not at all dissipated in his habits. He was relieved by bismuth and powdered calumba. This was evidently a case of poisoning from gastro-intestinal fermentation.

CASE III.—A gentleman, fifty-four years of age, with gout for twelve years. After poisoning himself with an overdose of a patent medicine, known as Reynolds' specific, he had a watery diarrhœa, which had a definite relation to certain head symptoms. Whenever the diarrhœa was present he was troubled with mental cloudiness, and whenever constipation could be induced his mind was clear. During the past year very good results had been obtained from the use of salol, sodium, benzoate, and charcoal. The patient was unable to take salicylate of soda or naphthaline. Here, also, was unquestionably an instance of poi oning from intestinal fermentation.

CASE IV.—A gentleman, fifty-four years of age, the subject of peptic insomnia, whose father had suffered in the same way. He would sleep on first retiring, but always woke after three or four hours. For a time he had taken salicylate of soda with some benefit. but it had to be given up on account of its unpleasant effects, and during the last three months better results had been obtained in his case from creoline, with charcoal as an excipient.

CASE V.—This was an unpromising case of epilepsy in a lad seventeen years of age. He was first seen by Dr. Thomson, in October, 1886. The epileptic seizures had followed an attack of what was diagnosed as cerebro-spinal meningitis when he was three years old, and had continued ever since. The attacks were always preceded by pain in the stomach, and a comatose condition continued for a number of hours, and until the appearance on the body of a general eruption like urticaria. For some years his parents had given up all hope of relief, and when he came under Dr. Thomson's care the latter was requested not to give him any bromides, as they always made him worse. The seizures were often as frequent as two a day, and he found that they were always preceded by a watery diarrhœa. He also found that they were preceded by fetid breath. The principal agents employed in the treatment were turpentine resin, salicylate of soda, bismuth, and resorcin. The patient improved in general health, but not as regards the number of the epileptic attacks. He then employed picrate of ammonia and digitalis, with the result of preventing the attacks altogether. After a time, however, these remedies were discontinued, and in March, 1888, the patient had a fit. The attacks then recurred about once a week, though the breath was never offensive again. The picrate of ammonia and digitalis were now resumed, but this time they failed to have the desired effect. More recently the patient had been taking salol, nitrate of silver, and other remedies with benefit. This case can be regarded also as one in which there were plain indications of intestinal fermentation.

Dr. Thomson then went on to say that it could no longer be doubted that the intestinal canal might be the seat of the generation of violent poisons, the result of bacterial action, which were as active as any poisons that could be introduced from without. This was clearly shown in both typhoid fever and cholera, and Koch had demonstrated that the cholera bacillus runs through its entire course in the intestines. The poisons eliminated in the intestines acted like pancreatine, and, like it, had their effect increased by such substances as sodium carbonate. It was indisputable that many disturbances of the economy were primarily due to such poisons generated in the intestines, and this was especially true of functional derangements of the nervous system. This subject had been greatly elucidated during the last ten years by the investigations of Brieger, Selmi, and others, in regard to the ptomaïnes. While many of these were inert, there were others possessing every variety of deleterious influence, which closely resembled some of the vegetable alkaloids in their qualities.

Having referred more particularly to indol, he said that *à priori* we would expect that the intestinal canal, from the conditions known to exist there, would be likely to admit of such changes in its contents as would evolve products which would give rise to many distinct forms of nervous disturbance. He had long been convinced that there must be an essential difference between those forms of nervous disease which were intermittent in their character and those which were constant. If they were intermittent he did not believe that there could be any organic lesion, while, on the other hand, if the symptoms were constant the disease must be organic. These considerations, Dr. Thomson said, had a bearing upon the treatment. He agreed with Wilks that migraine and epilepsy were mutually exclusive. If an individual had one of these troubles, he would be free from the other, and the two affections were never interchangeable. He considered epilepsy a functional disorder from the fact that it was intermittent.

Since there was this constant tendency to fermentation, and the elimination of poisons in the intestinal tract, it might be asked, What is our safeguard from their dangers? The answer was, The character of the natural secretions. They were, in the first place, digestive, and secondly, powerfully antiseptic. In so-called uræmia, the condition was due rather to the excretion of intestinal alkaloids than to the excretion of urea, and from his belief in the liability to the generation of such poisonous products in various states of the system he had been led to employ antiseptic agents very largely in his practice. For a long time past he had been in the habit of treating migraine as dependent on defective innervation of the alimentary tract. In typhoid fever he used bismuth freely, on account of its antiseptic qualities. Among the other antiseptic agents that he had found most useful were resorcin, in five-grain doses, benzoate of soda with salol, and creoline with charcoal as an excipient. In looking back over the past few years in his own practice, he could observe, therefore, a marked change in the treatment which he adopted in various affections, the tendency being constantly toward the more general use of antiseptics.

DISCUSSION.

DR. H. N. HEINEMANN said that up to the present time our scientific knowledge was not sufficient to inform us, with the exception of indol and one or two other similar agents, precisely what the poisonous elements referred to in the paper were. They no doubt existed in three forms: (1) liquid alkaloids, (2) gases, and (3) bacteria. There could be no question that lithæmia or lithiasis, and many other conditions, were due to gastro-intestinal infection, and it would probably be found that the principal agents causing such infection were generated in the small intestine. As our knowledge of such conditions increased it would also, no doubt, be found that there were certain substances, each of which gave rise to a distinct variety of disturbance in the system. In this connection Dr. Heinemann referred to the entirely different symptoms produced in rabbits by tetanine and two other poisons derived from the animal economy which he had observed in Briger's laboratory during the past summer.

DR. W. W. VAN VALZAH referred to a case of epilepsy which he thought went to confirm Dr. Thomson's views in regard to this disease. It was observed that invariably after an attack (no matter how long the latter lasted) the patient vomited the food taken before the seizure. Although the trouble had been supposed by different physicians to be due to various organic conditions, it was a fact that under the use of a regulated diet and remedies addressed to the alimentary canal the patient had now gone for six months without having a single attack, when previously they occurred very frequently. He said he would like to know something more definite in regard to the method which Dr. Thomson employed in ascertaining the conditions present in his patients. He had found that, as a rule, physicians depended entirely too much on the accounts given by the patients themselves, and consequently neglected to make the thorough examination which was often essential to success in the treatment. Personally he made it a point to study each case with the greatest possible care. He noted the physical signs and the symptoms present, and examined not only the urine, but the microscopical condition of the blood and the gross and microscopic appearances of the stools. In this way he was able to get a definite knowledge of the digestive and assimilative powers of the patient, and he had found that this method afforded very satisfactory results.

DR. THOMSON said that in the limits of one paper it was entirely impossible to go over all the ground that would be involved in an exhaustive study of this extended subject. As to the examination of his patient, he had been accustomed to pay close attention to groups of symptoms,

and, beginning at the mouth, he questioned the patient very carefully in regard to the condition of the alimentary canal. The derangements connected with the stomach were quite different from those connected with the intestines. In migraine, the condition of the urine often varied very greatly at different parts of the day, and its characteristics at the beginning and at the end of an attack were different. It was sometimes possible to abort an attack, and for this purpose ergot was one of the most efficient agents that could be employed. Where there was gastro-intestinal fermentation the pulse was always of high tension.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting, December 19, 1888.

R. C. M. PAGE, M.D., PRESIDENT, IN THE CHAIR.

DISCUSSION ON DR. JACOBUS' PAPER (see p. 117).

THE patient was exhibited for the purpose of showing the median and lateral scars; the foreign body found in the vermiform was also exhibited, supposed to be a bean; also an elastic abdominal bandage for use in similar cases.

By way of illustrating the complications of appendicitis, perforation, abnormalities of the vermiform, etc., DR. GRAUER exhibited the following specimens:

1. A vermiform appendix, nine inches in length, running up to the liver.

2. Perforation of the vermiform, with general peritonitis, in a lady upon whom an abortion had been performed. Death had been supposed due to the abortion, but the perforation had evidently been its cause.

3. Biliary calculus in a vermiform appendix, illustrating a possible element of occlusion.

4. Atresia of the vermiform appendix.

5. Tubercular ulceration of the lower part of the vermiform.

6. Ulceration of the body of the vermiform appendix.

THE PRESIDENT announced that during the past year there had been three successful cases of operation for perforation of the vermiform under treatment by members of this Society, viz.: Dr. Baruch's case, operated upon by Dr. Sands; Dr. Dessau's case, operated upon by Dr. Burchard; and Dr. Jacobus' case, operated upon by Dr. Wylie.

DR. WYLIE said for some time past he had been looking for just such a case and was very glad to have the opportunity of operation, feeling satisfied that some recent cases of prominence had been lost by incomplete methods of operating. It will not do in such cases to merely open the abdomen, let out the pus, and put in a drainage-tube or iodoform gauze. Where there is general peritonitis a free opening should be made and all adhesions broken up, so as to prevent intestinal obstruction, and to be certain to get at all collections of pus and wash them out.

Suppurating peritonitis is characterized by the formation of pockets or puddles of pus between the adherent coils of the intestines, which must be loosened up to be washed out. In this case, even after washing out with two gallons of hot water, the hand was again passed into the abdomen and pockets of pus found that had not been touched by the first washing, and this was repeated three times before assurance was had that all of the pus had been cleared out and the intestines loosened so as to lessen the chance of intestinal obstruction, which is about as dangerous as the sepsis in such cases.

Recently the general surgeons have gotten into discussions about intra- and extraperitoneal abscess. With gynecologists it was an old question, and by the younger members considered settled in favor of intraperitoneal abscess several years ago. Abscesses about the appendix are very much like abscesses about the Fallopian tubes, and the pathology is very much the same. Acute phlegmons, or acute lymphangitis, or phlebitis, does exist in the cellular tissue; but it is known now, beyond any reasonable doubt, that pelvic abscesses are, with rare exceptions, always intraperitoneal. These abscesses are often found pushed below the normal level of the peritoneum, but this is due to the effort of nature to expel the dangerous substance out of the peritoneum.

When the symptoms indicate the formation of pus within the abdomen or pelvis, if it cannot be detected and readily opened with safety at a point where the sac is adherent to the floor of the pelvis or abdominal wall, without opening into the general cavity of the peritoneum, then an exploratory incision should be made, first to find the pus; when found, if the sepsis is marked, then, if possible, the opening to evacuate the pus should be made by the vagina, or at a point where the wall of the pus cavity and the parietal peritoneum are adherent. If this cannot be safely done, then, instead of adopting Mr. Tait's suggestion of opening the pus sac, washing it out, and sewing the sac into the opening in the abdomen, Dr. Wylie empties the sac of pus with a trochar, then carefully washes out the pus cavity with a 1 to 2,000 solution of bichloride, and having thus rendered it aseptic he proceeds to enucleate the whole pus sac, with the diseased tube or ovary, and thus do a complete, instead of an incomplete, operation. After removing the pyogenic sac, the abdominal cavity should be washed out with great care and a drainage-tube put in. In a large experience with abscesses about the pelvis, he has, with a single exception, always removed by enucleation all abscesses by the above method. Several times he has tied off the appendix when involved in the wall of abscesses about the right tube and ovary, but his experience with perityphlitis has been limited to three cases. The first case was seen in a medical ward of Bellevue Hospital. There was high temperature, sweating, and local tenderness, but with these symptoms two of his colleagues could not make out the presence of pus, and advised ice-bags, etc. Another colleague agreed as to the advisability of opening the abdomen, which was done, and more than a pint of very fetid pus was emptied out. The patient made a complete recovery in three weeks.

The second case occurred to the husband of a woman from whom the tubes and ovaries and a large pelvic abscess had been removed. Dr. L. A. Stimson saw the case in consultation. The history was the usual one of irregular temperature, localized pain, etc., but the man was so fat that only the faintest signs of pus could be made out. When he took ether his temperature was absolutely normal, and pulse 72, and his bowels had moved without difficulty, but there was found a full pint of very offensive pus, which was evacuated and a drainage-tube put in, and he made a good recovery. The pus was so completely shut off, that, at the time, the general system was not affected, but without the operation he would have had very little chance of getting well.

The third case is the one just reported by Dr. Jacobus. The two points of highest importance are: 1. If it be a case of general peritonitis, due to the bursting of an abscess, the abdomen should be opened freely, and all intestinal adhesions should be broken and all of the pus washed out and drainage established. It will not do in such cases to merely open the belly, wash out the original abscess, and put in a drainage-tube, although the latter treatment will do if the peritonitis is localized, even though the abscess is large and the symptoms simulate general peritonitis.

2. That even in local peritonitis it is better surgery to wash out the sac of the abscess and enucleate the sac than to sew it to the abdominal wall.

DR. ROBERT ABBE considered the main points in controversy—the use of physic before operation and the use of the abdominal douche. Some time ago it had been generally conceded that physic before operation for perityphlitis was wrong. The speaker still adhered to this view. The mechanical conditions were not such as to require physic. There was very rarely a loaded cæcum

in these cases. The trouble was in the vermiform. The voluminous secretion produced by physic, and the increased peristalsis was apt, he thought, to favor the escape of fecal matter into the peritoneal cavity, or to precipitate rupture, where this had not already occurred. After operation there was no question as to the value of laxatives. Where the temperature rose there was nothing which acted so well as a saline administered after Tait's suggestion; before operation he thought the enema a better and safer method of clearing the lower bowel.

The speaker regretted that Dr. Weir was not present to defend the statement credited to him by the author of the paper. During the past summer he had himself had a case of perityphlitis, which had ended disastrously. The patient had been up in Vermont when seized with the attack, and had sent for him to the east end of Long Island. A subsequent telegram that the patient was better, and again another stating that he was worse, resulted in a delay of forty-eight hours. He mentioned the fact of the transient improvement because it was so common in these cases. There was some further delay in securing suitable assistance, and the operation was done upon the fifth or sixth day, when the patient was suffering from shock and other evidences of perforation. The median incision was used. An accumulation was found upon each side of the median line. A half-pint of pus was liberated, with four fecal concretions. Adhesions extended transversely across the abdomen, so as to divide the cavity into an upper and a lower portion. The upper part was not invaded. With the concurrence of Dr. Weir, however, he had thoroughly explored and washed out the whole cavity. The patient had rallied after the operation, but at the end of the third hour had commenced to decline in strength, and at the end of six hours had died. Dr. Weir had subsequently agreed with him in thinking that both segments of the abscess might have drained through the central incision, and in belief that the shock of the irrigation had been a factor in the fatal issue. They had agreed that it was better to limit irrigation to the abscess-cavity. The speaker had had twelve or fifteen cases in all, and in every instance he thought that the intestines had been coated with lymph. It was the usual condition, yet these patients had recovered. Recovery was, indeed, the rule after operation in these cases.

The question of different varieties of infection should be taken into consideration. Other organs—the tonsils, for instance—might be subjected to both a low and a high grade of infection. He saw no reason why the same fact might not be advanced here. There were some cases which were apparently fatal from the outset. He thought, however, that the percentage of deaths would be found higher where general irrigation was practised, than where simple drainage was relied upon.

Dr. W. T. Bull expressed his pleasure for the privilege of examining this patient and hearing the interesting report. In its diagnosis and treatment the case was a brilliant one, and he could not add anything to the good and precise summing up made by the author of the paper. He failed, however, to recognize the case as a perityphlitis. The treatment of general peritonitis by laparotomy, breaking adhesions, and washing out was conceded. Had the case been taken in hand earlier, however, these measures would probably not have been required. Upon the third or fourth day there had probably been a circumscribed peritonitis. Operation then would have prevented general peritonitis. He had no desire to belittle the operation as done, but simply wanted to call attention to the value of early diagnosis and prompt treatment in these cases. It was better to avoid a general peritonitis than to cure it after it had developed.

The speaker referred to the fact that Dr. Parker had been the originator of the practice of opening these abscesses. The previous opening of the peritoneum did not practically alter Dr. Parker's operation.

The question of intra- or extraperitoneal origin was, he thought, settled. All were primarily intraperitoneal. The cases of operation and autopsies in which the cæcum was found outside of the peritoneum, and the cases in which the abscess was found behind the peritoneum, would show a previous attack of perityphlitis as the agent which had shut off the cæcum and made it an extraperitoneal organ. Although, however, the abscess was intraperitoneal, not a very thorough laparotomy was required to reach the collection. The tendency of peritonitis was, as had been said, to shut off and encapsulate its products. Dr. Parker's rule had been to incise down to, but not to open, the peritoneum. If pus were found, evacuate it, if not, close the wound. Parker's operation had required modification only. We now incised not only the abdominal wall, but the peritoneum and whatever else intervened until pus was reached. The end of the first week he thought the most critical period in this disease.

The speaker had found the needle very useful in localized inflammations where the presence of pus was uncertain. He had never seen any harm from its employment. In one hospital in this city it was at one time the custom among the house-staff to plunge the needle perpendicularly into the abdomen of every patient in whom there was the smallest suggestive symptom, and no harm was known to have followed. He did not endorse such an indiscriminate use of the needle, and did not approve of its perpendicular insertion. When using the needle in this disease he inserted it obliquely, plunging it first near the iliac border and then into the lumbar region, pointing it forward and inward to the location of the cæcum. Pus was apt to burrow in this location. By the use of the needle time was gained and burrowing avoided. In operating for perityphlitis it was not desirable to wait for the signs of general peritonitis—vomiting, tympanites, and distended abdomen. One should operate when there were any signs of local peritonitis, and if in doubt use the aspirating needle to settle the diagnosis. The speaker would not, however, encourage unnecessary operations. Three cases had been recently reported from Boston in which apparently resolution would have occurred spontaneously if undisturbed, but this was not the usual history. Usually operation was undertaken too late. On the other hand, the exploratory incision in the iliac region was no more than a simple stab-wound, where the intestines were not punctured. All knew that this was not a dangerous injury, several thousand so injured having recovered during the late war.

Dr. R. G. Wiener had operated upon six cases in two years. One of these cases had illustrated Dr. Bull's statement in regarded to the value of early operation. He had operated within forty-eight hours after the appearance of the local symptoms upon a slight increase in the temperature and pulse. He had made the lateral incision, and had come down upon the appendix in a gangrenous condition. There was no suppuration and no peritonitis, and after the first twenty-four hours the man's temperature had been normal. Another case was that of a man upon whom he had operated at the end of seventy-two hours, and death had followed within twelve hours. One could not tell whether a case would eventuate in an encapsuled abscess or general peritonitis. When in doubt laparotomy for exploration was clearly indicated. The incision should do no harm.

Dr. Jacobus inquired whether Dr. Wiener gave laxatives or opiates in the after-treatment of his cases.

Dr. Wiener had not given laxatives, and but little opium. The bowels had moved spontaneously, as a rule.

Dr. Baruch asked whether Dr. Wiener had noted any special decubitus in this disease.

Dr. Wiener replied that the abdomen had been rigid, but no special decubitus had been noted.

Dr. Leale had been accustomed to follow Dr. Parker's directions in circumscribed abscess. He regretted that the author had not mentioned Dr. Parker in his paper, as he had been one of the pioneers in the treat-

ment of this disease. The recommendation of elaterium as a cathartic, also, he would criticise on account of the vomiting produced by it. He had used the best Clutterbuck's elaterium, and while it was invaluable where large watery accumulations were to be carried off, the vomiting would contra-indicate its use after laparotomy, where tension upon the sutures was to be avoided.

DR. J. LEWIS SMITH raised the question of preliminary treatment. The patient was first seen by the general practitioner. Formerly poultices had been used during the initial stages, but of later years the ice-bag had been more generally employed. He asked which the surgeons present preferred as a preliminary application.

DR. BULL did not think that either application made any difference in the ultimate result. The cutaneous œdema produced by a poultice somewhat obscured the local evidences and made the diagnosis more difficult; but, on the other hand, the poultice was more grateful to the patient, as a rule, and there was no essential reason why it should not be employed.

DR. BARUCH felt that the life of the patient was, after all, in the hands of the general practitioner, as he would see the patient first. The question of diagnosis was of the greatest importance. If the diagnosis could be made out, the treatment was clear. He had lost four cases by perforation when he had had medical counsel. With surgical counsel he thought that they might have been saved. Last winter he had called in Dr. Sands, and the case had recovered. As aids to diagnosis he had depended upon the tenderness in the right iliac fossa and the peculiar decubitus. The right leg was drawn up.

DR. DESSAU referred to a case where he had called in Dr. Smith and Dr. Wyeth, and an ice-bag had been recommended. Resolution followed. In another case, with eminent counsel, poultices had been used, and resolution had followed. It seemed immaterial which were used. On the score of comfort he thought the ice-bag was to be preferred. It was more easily applied, was steadier in its action, and was better borne. He had used the aspirator for the purpose of diagnosis and never had seen any bad result.

DR. C. S. WOOD remarked that the death of the patient should not always be ascribed to delay on the part of the general practitioner. He related the case of a boy, found on the third day in a tenement-house, in a hall bedroom. Peritonitis was recognized, he was removed to the New York Hospital and was operated upon that same night, but before the noon of the next day he was dead. The blame could not be attached to the general practitioner in this case.

DR. WYLIE spoke in regard to the use of the aspirating needle for diagnosis. The danger lay in cases where pus was found. It was to be remembered that the sac of the abscess was rounded, and that while one of its aspects was adherent another might be free. If the abscess were punctured through its adherent portion no harm would result. If punctured through its free portion, however, even the prick of the hypodermic needle might give exit to its contents into the peritoneal cavity. This had happened in Bellevue, the abscess had evacuated itself, and within twelve hours the patient had died from suppurating peritonitis. In cases of doubt, where there were chilly sensations or an elevation of temperature, it was safer to open the abdomen in the median line and explore. He had been the first, at least in this country, to adopt Tait's practice in regard to saline laxatives. From close observation of a number of cases, however, he had come to the conclusion that this catharsis acted by relieving obstruction either in the bowels or vital organs, and not by the removal of poison alone. He repeated his opinion that the essential lesson to be gathered from the case of the evening was the safety and the value of thoroughly breaking up the adhesions in these cases.

Dr. J. D. Bryant, unable to be present, sent the following note: "December 19th, 9.30 P.M. I am much obliged for the opportunity of advocating, as I should have done, early operative procedure and avoiding loss of time in making refined diagnoses."

DR. JACOBUS closed the discussion. He had referred to Dr. Weir's paper simply to call attention to the extraordinary heat of the water used in the irrigation. If so warm that the hand could not be borne immersed in it, he thought that it might easily have caused shock. If the death of the patient could be traced to the irrigation this excessive heat was probably its cause. To Dr. Abbe's objection to the laxative before operation he would only say that in this case the laxative had apparently acted beneficially. If the patient had not got up he thought that resolution would have followed upon the improvement of the second day. This improvement might have been attributed to the antipyrine, however, known to be one of our most excellent antiphlogistics. He repeated his statement that any evidences of peritonitis were sufficient to justify the exploratory operation. A fine diagnosis was not required.

Stated Meeting, January, 16, 1889.

A. M. JACOBUS, M.D., PRESIDENT, IN THE CHAIR.

DISCUSSION ON DR. FRUITNIGHT'S PAPER (see p. 122).

DR. BLUMENTHAL had been surprised to learn that the tendency to vesical and renal concretions was so great among children. In his practice, extending over a good many years, he had seen some cases of obstruction and retention, but these had been relieved without dilatation or operation, the force of the stream of water driving the stone through. He had been glad to hear the author emphasize the dietetic management of these cases. The statement of cure by operation was doubtful if the tendency remained. After-treatment to combat the diathesis was equally required.

DR. WOOD also had been surprised to learn of the relative frequency of this difficulty in children. He had been especially interested in the European prevalence of the condition. He thought that there was no such number of cases here. Poor assimilation was the original cause. Scrofula and all the predisposing causes were more common in the older countries where the poverty was great. In his practice he had not found anything like the same proportion of cases. The dietetic management was all-important. He referred to a case of urethral calculus upon which he had successfully operated. Concretions under the prepuce were due to smegma in all instances, which might give rise to some irritation, but not in an extreme degree. Where the child was always pulling upon the penis and working with it he had, as a rule, found phimosis, and operation had been required to relieve the difficulty. He referred to the case of a girl, of eleven years, where he had dilated and removed the stone. This child was, as noted by the author of the paper, of strumous habit and surrounded by bad hygienic influences.

DR. CAILLÉ, on invitation, spoke, referring to a case in a girl whom he had found in bed, complaining bitterly of pain, and evidently suffering from intestinal or renal colic. The next day the pains had been relieved, but the parents stated that the child passed no urine. Examination showed the presence of urine in the bladder, and on using the catheter a slow stream was obtained followed by a gush and the expulsion of a small stone.

Another case was that of an infant, a few days old, who refused the breast, moaned, and drew up its legs as in colic. The napkin showed spots with a reddish centre. Palpation disclosed tenderness of the lumbar region. Under treatment with warm baths the distress was relieved, but the child died three days later. The autopsy showed acute nephritis. The diagnosis of renal colic was easy in some cases but in others very obscure.

DR. MILBANK thought the paper of the evening most valuable. The literature of the subject was not abundant, and statistics not full. He had seen a few cases of stone in the bladder in children, and many cases of the uric acid infarctions in the new-born. Since learning of

the subject of the evening's discussion he had examined about forty bodies in his service at the New York Infant Asylum. Among these had been a number of cases of kidney infarctions, but no cases of stone. The cases had been in children from two months to three years of age.

DR. PECK considered the symptomatology of the paper particularly valuable as directing attention to the fact that not every colic, not all the screams of young children were due to intestinal trouble. An interesting thesis was propounded by Sir Henry Thompson, ten years ago, at his clinic in the University College Hospital, London, viz.: "Why do we find vesical calculus among the adult rich and the infantile poor, and not *vice versa?*"—a thesis which still remains unanswered. Uræmia and urinary concretions were interesting to the ophthalmologist not only for the changes in the retina and the optic disc, but also for symptoms connected with the pupils and the ocular muscles.

DR. PAGE referred to two cases for which he had called upon Dr. Markoe in consultation. The symptoms were those of stone, but circumcision gave complete relief. The same relief might possibly have been given by washing the glands with warm water and borax. He regretted not having at least tested this treatment.

DR. DESSAU had seen a large number of children, in dispensary and private practice, and could recall but a single case of stone. This was in a boy, six or seven years of age, who presented a small calculus, one inch behind the meatus, discovered by palpation and the probe. Manipulation brought the stone to the meatus, when the forceps removed it. Stones were most likely to lodge in the fossa navicularis, the smallest portion of the canal. Diet, cod-liver oil, and hygienic surroundings were of the utmost value in the treatment of the condition.

DR. BLUMENTHAL desired to emphasize the value of physical exercise in the open air.

DR. PECK asked whether Dr. Fruitnight had in the course of his recent reading found that rheumatism and rheumatic gout went hand in hand with lithiasis in children.

DR. FRUITNIGHT had not found this association noted.

DR. DESSAU inquired whether the calculus spoken of as urethral had been supposedly formed in the urethra or simply washed down.

DR. FRUITNIGHT replied that it was generally washed down. In only one case had it been demonstrably formed in this location. In closing the discussion the speaker emphasized the hygienic measures to be used in the treatment of the condition.

BACTERIA IN THE GLACIERS.—Dr. Schmelk, of Christiania, has found vast colonies of bacteria in the ice of the Jerstedalsbræ glacier and in the streams fed by it. They appear under the form of rods, and resemble the bacillus fluorescens liquefaciens. During their period of growth these bacteria emit a fluorescent material. They multiply with great rapidity during periods of thaw.—*Centralblatt für Bacteriologie.*

AN EASY WAY TO GET PREVENTIVE VACCINES.—Professor Bouchard, writes a correspondent of the *Berlin Medical and Surgical Journal*, lately communicated to the Academy of Sciences a note to the effect that the soluble matters manufactured by microbes may pass through the body of the animal in which they exist, and be eliminated by the urine, preserving at the same time their property of conferring immunity, as shown by the researches of MM. Charrin and Ruffer. To test the value of these researches, Professor Bouchard inoculated healthy animals with the urine of an animal affected with a virulent malady, and the result was that the healthy animals appeared to have acquired immunity just as if they might have been vaccinated. The urine may therefore be said to have behaved as a veritable bouillon of culture.

Correspondence.

IS THE PRACTICE OF MEDICINE A FAILURE?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: If it be true that THE MEDICAL RECORD is a round higher on the ladder than any other American medical journal, the offence is due in part, no doubt, to the editor, whose effusions always furnish instruction, amusement, or food for thought, and sometimes all three. That the editor feels the importance of his position is indicated by the fact that from his elevated perch he sees far enough from his base to begin to be honest with himself, the world, "and the rest of mankind."

Being something of a visionary and dreamer, the writer has been accustomed to direct his mind's eye into the unexplored mists of the future for a sign of the coming millennium, when all professional (medical) men could be honest with themselves and their patients, and still find bread to eat. If he could in any way contribute to the hastening of that event he might indeed thank God that his servant had beheld his glory, and betake him to "the drapery of his couch," and "lie down to pleasant dreams." But to the question, When can such things be? "we offer no positive answer."

In considering the question, "Is the Practice of Medicine a Failure," THE MEDICAL RECORD very properly, I think, eliminates from the inquiry surgery and hygiene.

Surgery has become a great art, so great that even the abuses which beset it in special directions are no offset to its grand and beneficent results. True, the man who suggested aspiration of the heart was not confronted by a writ *de lunatico inquirendo*, nor has Alexander's operation ceased to be done; but the evils of rashness will correct themselves, and the men who now spay for fame will surrender the field to men who spay to save life.

But what if Nemesis should overtake the rash aspirants for fame! Woman is being "unsexed" in various ways. She is crowding man in every "liberal" calling—more in medicine, perhaps, than in any other. Suppose she should get on top before the advent of the medical millennium for which the writer has been praying. We may then find our cremasters tucked and fluted for pendant scrotum; the prepuce flounced for redundancy; the epididymis resected when the testicle is too low; our ureters catheterized, and the pelves of our kidneys curetted; and Miss Cynthia Tate, more bold and brilliant than all the rest, will castrate for all manner of neuroses. Then the sins of the fathers shall be visited upon the children for generations, perhaps.

Hygiene, however, is the direction in which the finger-board of future glory seems to me to point. Few people, relatively, require the art of the surgeon. All are intensely interested in the causes which develop disease, and the means of removing the causes or preventing the development. Of course there are certain causes inherent in the race which science cannot remove. It can only point the way, and trust to the slow process of evolution to make man master of his appetites, everyone of which, indulged to excess, becomes a source of disease. But man's environment is more easily controlled, and there is reasonable hope that the plagues and epidemics which have decimated communities in the past will be substantially, if not literally, banished. A wide-spread epidemic of yellow fever, with a percentage of death below the rate of most acute febrile diseases, is certainly remarkable, and, in spite of Sternberg and soda, it is too early to give the credit to therapeutics; for did not the negroes say that the colored people who sent for the doctors died, while those who threw "physic to the dogs" got well?

We will accept it as definitely settled, then, that the practice of medicine, so far as surgery and hygiene are concerned, is not a failure. This leaves two branches of the inquiry open to discussion: 1. Is the practice of medi-

cine a failure from a purely business stand-point? 2. Is it a failure from a therapeutic stand-point?

The writer's observation extends over portions of a majority of the States of the Union, a minority of the Territories, and the District of Columbia. I estimate, first, the number who enter the profession; second, the number who succeed; third, the number who do fairly well; fourth, the number who exist; and, fifth, the number who fall by the way. Comparing them by this scale with the numbers who enter commerce, the law, and the ministry, I am persuaded that the practice of medicine, from a business stand-point, is not a failure. The percentage of successes seems to me to be quite as large in medicine as in the other callings.

The classes who enter these pursuits in the country generally average much the same, and succeed or fail for much the same reasons in each.

And herein arises the point of real interest which attaches to the study of this question. The most cruel falsehood ever engrafted upon science by the phrase-makers is the modern dogma of "the survival of the fittest." The fittest never did, and I fear never will, survive by virtue of fitness. The *strongest* survive, not the fittest.

It is the "good" who die young, the pearls that are trampled under the feet of swine, and "modest merit" that is crushed to earth by arrogant assumption!

Men succeed or fail, in any calling, in consequence of a *personality* which bears no relation to knowledge or skill. No doctor ever succeeds solely by reason of knowledge and skill, nor fails solely for lack of knowledge and skill. Knowledge and skill are good, but of themselves they never bring business success. Some of the highest examples of knowledge and skill in the profession that I have met were conspicuous failures from a business stand-point; while some of the most brilliantly ignorant examples were among the most brilliant business successes, being the most idolized by the laity, in consequence of certain personal and social characteristics. When the lay mind finds its man, it finds its doctor.

I am aware that it is not easy for the successful doctor to grasp this truth. "We are all poor critters," and the wisest are too prone to lay the flattering unction of success to superior knowledge and skill, instead of giving credit to things which belong to the man and not the doctor—things which were as much a part of the man before he looked at a medical book as after he graduated.

Those of us who have enjoyed opportunities for extended observation have seen this truth illustrated in other pursuits; have seen the most profoundly read lawyer in his county—modest, retiring, sensitive—starve in neglect and seclusion until, through pity, his more successful brethren would secure his appointment or election as justice of the peace, where, as Squire Blackstone, he would manage to exist in dignified poverty, while Jack Goodfellow, a mere tyro in law and too restless to study, would grow rich in the practice of the profession. The profoundest students are not men of action.

Whether the measure of the doctor's success is sufficient to compensate for his loss in longevity will depend, I suppose, upon how you look at it. Money is not his only reward. In all other respects he is apt to pass at a very full valuation, and if he is hard-up, as he often is, his creditors are apt to be more considerate than with mankind in general.

Then considering, as I do, that the profession, though terribly crowded, is not more so than legal and mercantile ranks; and that its success on the whole is equal to the others, I must assume that, from a strictly business stand-point, the practice of medicine is not a failure—though, God knows, the pathway is sufficiently strewn with failures.

Is the practice of medicine a failure from a therapeutic stand-point?

Difficulties almost appalling stand in the way of a satisfactory answer to this question. Like the young man who inherited his father's estate, but who met such difficulties in the management of it that he "almost wished, sometimes, that father hadn't died," I almost wish, after having travelled so far, that I had not started to answer THE RECORD'S conundrum. But it has been my rule of action never to shrink from any task, no matter how difficult, if the patient's life was in danger and I could not shift the responsibility upon someone else, and I shall not shrink from this, as there is no substitute at hand.

Banish hygiene from the modern management of disease, and how far have we advanced from Hippocrates? Take measles, whooping-cough, scarlatina, any of the specific or continued fevers, and place them under the hygienic conditions that confronted Hippocrates, and can we cure any more than he cured?

Boerhaave was credited with the possession of all medical wisdom of his time, and the great volume through which he consented, after much importunity, to transmit it to the ages, was found upon his death to contain only this:

"Keep the head cool, the feet warm, and the bowels open."

Can we do more than Boerhaave enjoined? Can we do as much? Perhaps. We can open the bowels, we can aid in restoring warmth to the feet or in keeping them warm. We may be of service in keeping the head cool. But we may fail in all these.

Under like hygienic conditions, what can we do more than our fathers did to save life? Do we in all things do as well? What of the treatment of pneumonia, to which you allude with a humiliating array of figures?

Just here the image of a grand old man rises before me. He began to practise medicine about 1832. Thirty years later he stood before me as professor of practice in my medical Alma Mater. He was always happy when he came to pneumonia. He would say:

"Now, gentlemen, we will consider the most manageable malady in the whole catalogue of inflammatory diseases. I can take hold of pneumonia with absolute knowledge of the power of the means at my command."

Then he would describe with exactness the stage of the disease at which he bled, copiously or otherwise according to the strength of the patient, and the effect of that remedy; the stage at which he used antimony, and the effect produced thereby. Then, as if conscious that the tide against phlebotomy was setting in so strongly that not one student within hearing would dare follow his advice, he would raise his arms and voice excitedly and declare:

"Gentlemen, I am no Sangrado! I do not run around with a lancet always between my thumb and finger! I only tell you what my experience has demonstrated more than a thousand times."

I think the old gentleman's suspicions were well founded. I doubt if any member of his class ever practised phlebotomy. I never did. But, stranger than that, I have never lost a case of pneumonia, though I have treated some most unpromising cases.

"Treated," did I say? No, I never treat pneumonia. I just try to manage it, giving a little bromide to keep up appearances, a little Dover's powder if the pain require it, and whiskey in the form of eggnog and milk-punch later on. But as my experience with the disease is limited to a little less than twenty years in Dakota and Montana, where one lung is as good as two in the Eastern States, I claim no credit for treatment, and but little for management.

But would it not be well for some "bold, bad man" to study Marshall Hall, Dickson, Wood, and others—editions of forty years ago or so, and test their treatment of pneumonia as applied to modern conditions? There would at least be something novel in Marshall Hall's universal initiative in febrile diseases: "Bleed to faintness."

When I have seen an oily and unctuous brother, armed with Humphrey's specifics, create more enthusiasm than the best equipped regulars from the best schools, such faith as I had in men and drugs has suffered a great

shock. When I have seen the same brother, in order to evade prosecution for practising without legal authority, leave the town to the mercy of disease for five whole weeks, and return with a certificate from one of the leading colleges in the Northwest, and immediately add to his *clientèle* a larger percentage of merchants, bankers, ministers, and other intelligent classes than the most popular of the regulars, I have been on the verge of doubt. True, some of the lonesome regulars said he furnished more than his share of business for the undertaker. But then he had a right to. He had more material to work upon.

When I have seen a graduate of a noted university give the one four-hundredth of a drop of tinct. belladonnæ, I have at least wondered; and when I have utterly failed to establish a difference in mortality under the different systems of medicine practised under my own eyes, well —further remark is useless.

It has taken me twenty-five years to be convinced that so simple a thing as gonorrhœa cannot be cured, and I still cling to the belief that it gets well the quicker for a little judicious management.

But, my dear RECORD, we can do a great deal with drugs besides kill people What of the intermittents and syphilis? We can open the bowels, and sometimes close them; and how much better Nature often works after we have removed a part of her burden. We can relieve pain, often with more apparent good than harm. And when Nature's fight against the last enemy becomes hopeless, we can render her fall less shocking to the audience.

No, the practice of medicine from a therapeutic standpoint, though not a brilliant success, is not a failure.

S. S. TURNER, M.D.,
A. A. Surgeon, U. S. Army.

FORT KEOGH, MON. T., January 3, 1889.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending January 26, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	15	5
Scarlet fever	325	50
Cerebro-spinal meningitis	3	3
Measles	291	22
Diphtheria	176	39
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

A REMINISCENCE OF DR. C. R. AGNEW.—Charles Albert Sewall, Acting Assistant Surgeon, United States Army, of Whipple Barracks, Ariz T., writes: "When the doctor was on one of his tours of inspection, examining into the condition of the Indians at their various agencies in the Western Territories, in making a journey from the Mescalero Apache Agency, he stopped at the military post where I was in medical charge—Fort Selden, New Mexico, on the Rio Grande. It was a delightful experience to meet him socially, even 'way out on the frontier,' such a charming raconteur, so urbane and pleasant in every way as he was. In coming from the Indian agencies to the railroad he would often make long day trips in a stage or ambulance, and sleep at night in ranches along the way. 'Do you know, Doctor,' he said upon one occasion, when the subject of carrying a pistol came up, 'I have here in my pocket a most deadly weapon.' Knowing how peaceable ordinarily Dr. Agnew was, I was quite surprised, and continuing furthermore, he said: 'I have taken many lives with it.' 'How is that, Doctor?' I asked; and without any more ado he proceeded to take out of his pocket an insect powder blow-gun loaded for use, with the remark that he 'kept that for use on the *Cimex lectularius* which he had found to grow luxuriantly in the beds of our progressive citizens who emigrate to the Far West, and this was the only kind of a gun he ever carried.' I took him over my little hospital, and the following remarks were made by him, which I think are decidedly interesting. 'This hospital is very clean and neat,' said he, 'but I notice you have only plain beds with white spreads and bare floors in the wards. It has been our aim in New York to make our hospitals cheerful, as well as comfortable. A bright rug near the bed would help out, flowers growing about, bright colors in pictures and wall colorings, and to cultivate an air of cheerfulness as well as purity. Particular attention has been paid to the avoidance of hospital odor. Good cooking has been a desideratum, and the days of a hospital diet of "wedges of bread," "tannin tea," and "chunks of meat," are over, as far as our hospitals are concerned.' He was quite shocked at the way in which the Mohave Apaches treat their medicine men, referring to the custom of the killing of the medicine man by the tribe after the fifth death occurred among his patients. 'Poor untutored martyrs to superstition,' he called them. It is indeed a crying shame that these Indians do this thing every day in this enlightened age. I have seen a poor hunted Indian flee for his life to a military post, wounded and suffering, knowing that as soon as he left the protection of the military authorities he was doomed to instant death. I would here incidentally remark that this tribe is rapidly dying off with phthisis pulmonalis, and the barbarous misuse they subject all patients to, by treating them with a system of massage in which they frequently tramp the life out of the patient. I know of no more worthy field for philanthropy than the Mohave Apaches, for a more barbarous, superstitious, destitute set of human beings I never saw. If they acquire a competency in horses and food and clothes, such as it is, as soon as one of their number dies they cremate not only his body, but all his clothing, horses, food, and much of the same kind of material belonging to his friends in the tribe. They religiously believe that the thicker the smoke of the funeral fire, the more quickly his spirit ascends to the happy hunting-grounds. In this way the more funerals they have the poorer they are, and this custom bids fair to soon annihilate the tribe, keeping them constantly in an impoverished condition. The calmness and confidence with which one of these Indians looks upon approaching death, having, as he has, a firm faith in future happiness beyond the grave, would be a lesson to a Christian believer."

IS THE TASTE IN THE MOUTH?—Is it not a little singular that physicians will persist in speaking of the taste in the mouth? A patient was asked the other day if she had a bitter taste in her mouth in the morning. She naively replied that when she had a bitter taste it was always in her mouth. That is the only end of the alimentary tract that we know of in which the sense of taste resides.—*Medical Age.*

If our contemporary will be so particular, we may perhaps venture to remind him that, if one comes down to a minute analysis, the taste is not in the mouth in reality at all, but is in the gray matter of the uncinate gyrus. The idea that the taste is in the mouth is simply due to the eccentric projection of the secretion according to the known laws of physio-psychology. We trust that he will make proper explanations to the lady.

A NEW ASEPTIC AURAL SPECULUM.—Mr. A. J. Malony, the otacoustician, of Washington, D. C., has introduced to the profession a new aural speculum made of firm material resembling card-board, which, from its cleanliness and cheapness, offers some advantages over the metallic speculum. They are made after the patterns of Wilde and Gruber, and are so cheap that they may be thrown away after being once used.

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Original Articles.

INAUGURAL ADDRESS ON THE PRESENT NEEDS OF SCIENTIFIC MEDICINE.[1]

By ALFRED L. LOOMIS, M.D., LL.D.,

NEW YORK.

FELLOWS OF THE ACADEMY: The words to which we have just listened have quickened in me the consciousness that in accepting the honor you have conferred upon me I am entering upon grave responsibilities that demand an intelligence, judgment, and energy which cause me to distrust the wisdom of your choice.

As I review the good work that has been done in the Academy during the past four years, under the guiding hand of Dr. Jacobi, I am impressed with the fact that he has inspired all its departments of scientific work with his own indomitable energy and broad culture. He has laid the foundations of a far more comprehensive structure than existed before. He has striven to make this Academy the centre of scientific medicine in this city—I might say in this country. His labors have been unremitting, disinterested, and self-sacrificing, and he leaves the presidential chair with the highest esteem and gratitude of all its Fellows. How successfully the work which he has so ably begun was continued must be told by those who, years hence, shall write our history. It is our hope and purpose that the "well done," with which history has already sealed the record of the past, may not be denied to the future.

I desire this evening to speak to you of the "The Present Needs of Scientific Medicine in this City," and through you to the noble and broad-minded men and women, whose hands and hearts are in every enterprise that tends to make our city the centre of material power, art, science, literature, and human charity.

It were perhaps more fitting on such an occasion as this to indulge in mutual congratulations rather than in criticisms, to recall battles won, storms that are past, and to speak of the brightening skies that overarch our present successes; but to those who battle for science the time for congratulations come only when there are no new problems to be solved, no more wrongs to be righted, no faults that may be corrected, no needs that may be supplied, no new fields that may be explored, where faithful workers may perform greater achievements than have been reached in the past. Surely no one who reads with intelligent insight the lessons of the past quarter of a century, and who realizes the necessities of scientific workers in every department of human knowledge, can fail to be impressed with the conviction that a higher and broader culture is needed in those who are entering these fields of labor, and in no one is this more apparent than in that of medicine? That there have been great advances in this respect during the past twenty years few will question, but that the standard is still far below what it should be is equally apparent.

The remedy for this is somewhat difficult to reach; certainly the entrance examinations to our colleges which have been proposed do not solve the problem. It seems almost ridiculous that a few questions in mathematics, the elements of physics, and the rudiments of language, less difficult and less comprehensive even than those required for entrance into our academic colleges, can be a satisfactory criterion of a candidate's fitness to commence the study of medicine. It is to be remembered that a quarter of a century has wholly changed the relations of human knowledge, and that the natural sciences have become the chief factors in our modern civilization. Medicine, which once relied upon authority and tradition, is now rapidly seeking for its basis the natural sciences; medical students, of all others, should have a special education in these sciences. So long as a special training is not required as the important part of the preparation for entering upon the study of medicine, so long will the instruction in our medical colleges be incomplete and unsatisfactory. Defects in early training cannot be made good by excellence of professional teaching; mental equipoise, keenness of perception, analytical acumen, and intellectual power of differentiation between fact and fancy cannot be developed after the mind has become dwarfed during its years of plastic growth. To make cultured physicians, our colleges must be furnished with cultured men. The remedy, then, lies more in the hands of the profession than in the colleges. When the profession shall realize their responsibility in this matter, and shall refuse to send to medical colleges, or advise to enter upon the study of medicine men devoid of natural talents, mental discipline, and intellectual power, then will the colleges be furnished with material capable of receiving the instruction which they have to give. In England and on the Continent the higher general culture of the profession has so influenced the mass of medical men that no uneducated man thinks of entering upon the study of medicine. This is the first demand which medical science makes of us, that our *esprit de corps* be more sensitive, that our sense of personal responsibility be more keen, and with a courage born of conviction, and strengthened by the nobility of our calling, we hesitate not to say when occasion permits, "You are not fitted to be a physician; choose some other path of life." When we stand ready as a body to take this position, then, and not until then, will it be possible for our colleges to do that high grade of scientific work which is justly demanded of them. For while we are justly proud, and have ample reason to congratulate ourselves on the many advancements that have been made both in graduate and post-graduate instruction in our city during the past twenty years, and while we are fully abreast, if not in advance, of our sister cities in this matter, we are still far from meeting the demand of scientific medicine—to fully answer its demands. The teaching bodies in our colleges must be placed on a higher plane; they must be separated from the financial interests of the colleges; vacancies in the corps of instructors must be filled by fair competition, thus stimulating the younger members of the profession who desire to made teaching their life-work, to prepare themselves by study and training to fill vacancies in our Faculties as they shall occur. The curricula of our colleges must be so extended and subdivided that not only will a larger number of instructors be needed, and longer sessions required, but what is of far greater importance, that those who teach may, by personal and familiar contact, gain such intimate knowledge of each student and firm control of his mental processes as will enable them to become teachers in the good old Anglo-Saxon sense—to be educators, and not simply instructors pouring out their daily dole of wisdom into unreceptive ears.

[1] Delivered before a meeting of the New York Academy of Medicine, February 7, 1889.

All the facilities for laboratory work, original research, pathological study, clinical observation, and, bedsides, instruction must be systematized and largely increased. In fact our medical colleges must be turned into workshops of scientific medicine, with skilled master-workmen in every department to guide, to lead, and, if necessary, to goad the young apprentice through his daily round of labor until, perfected, he shall go forth fully prepared to take an honorable place among the masters of the land. Not only should our colleges be thoroughly equipped with teachers and appliances for the training of undergraduate pupils, but they should be prepared to give well-trained men, after they have completed their graduate course, facilities for study and experimentation in new fields of investigation.

Our laboratories should be so endowed that scholars of rare ability, who are every year coming to our city for more knowledge, may not only have places to work in, but means to work with.

Why is it, then, that in New York City, the centre of all honorable activity, where wealth groans for an outlet, any institution of human learning should be unable to do good work for the lack of money to do better? Why is it that men of wealth do not realize their great opportunities for wise liberality in this direction, liberalities which will not only shed lustre upon themselves and our city, but will mitigate the sum of human misery as certainly and in many ways far more effectually than our hospitals and charities for the sick and suffering poor? My answer to these questions is, that the medical profession has not, as it should have done, directed the stream of accumulated wealth into this channel. The only appeal untilquite recently has been for means to establish hospitals and charitable institutions, so that to-day hospitals and dispensaries so far exceed the needs of the city that there is actually a premium on patients to fill their wards. Does anyone doubt that if the profession would unitedly urge the great and pressing needs of our educational institutions upon generous-minded men and women they would respond as liberally as they have done for the erection and endowment of hospitals and dispensaries. If educated men and women, by their words and writings, would create a public opinion that a higher education in every department of human knowledge is the only lasting glory of a great city; that mental development is more to be desired than material prosperity, and that next to religion, education is the great corner-stone of our civilization, then would science break the bonds which now bind her, and be able to offer to knowledge-seekers who come to us from every portion of the civilized world equal facilities for growth and development as are at present furnished by the centres of learning in the old world. History tells us that the greatest glory of ancient cities, long since buried in ruins, was their universities and lyceums, founded, reared, and fostered by the patronage and intelligent generosity of wealth and power. It is hardly possible to believe that this great city will much longer remain uncaring and unconscious of her greatest glory. The noble gifts which have been made during the past few years to educational institutions, and especially to medical colleges, inspire the hope that the stream of emotional benevolence for the sick and suffering is being turned into intellectual channels for higher educational needs; and may we not believe that in the near future this city shall produce a class of medical men of broader culture who shall enter on their life-work from a higher plane, carrying with them to the couch of suffering better skill, greater devotion, and a more comprehensive realization of the nobility of the work which they have given themselves to? In this connection there is need of the establishment of scholarships, fellowships, and independent lectureships which shall enable scholars of limited means to engage in scientific work. It is a part of history that, as a rule, the most faithful and efficient scientific medical work in this city has been done by men who in their earlier professional life had only such opportunities as they made for themselves, who were hampered, often almost to the verge of despair, by their lack of means. While appreciating most fully the value of adversity in developing character, I believe it may be carried too far, and that many stewards of idle millions will one day give an account for their failure to supply abundant means whereby brilliant men may be enabled to develop their full powers for the benefit of science and the common good. There should also be created a public medical opinion which shall cause scientific attainments to become so much more honorable than mere professional success, which so often depends on social rather than mental powers, as to induce young men of wealth and intelligence to devote their lives to study and research. Such work might well be done in connection with our colleges or under the auspices of our medical societies. If there were twenty such places of work to day I am confident they would be quickly filled by enthusiastic and intelligent workers, and who can estimate the amount of good that would be done each year, and the great influence it would have in unveiling the obscurities which surround so many of the vital problems now pressing upon us for solution in almost every department of medicine.

Another need of scientific medicine in this city in common with that of our country, I may say of the whole world, is a higher standard of medical literature. The American spirit of so-called enterprise presents no more deplorable manifestation than in the development of our medical literature. Before entering upon its criticism, however, let me say, that no one appreciates more than I the value of the work of many faithful and conscientious laborers in this field—laborers whose writings are the expression of crystallized thought and experience, whose patience never fails, who know no self but only mankind, and who, with a supreme reverence for knowledge and truth for its own sake, are devoting their lives to its development. It is because I recognize the power and greatness of such lives that I feel impelled to offer words of criticism on the redundancy of the medical writings of these latter days. The first fault which I would name is vain repetition, such as the heathen use, and a lack of original thought. Our medical journals are filled with articles that show haste in their preparation and a lack of careful consideration in their statements; positive opinions are given, unsustained by reliable data or extended observations; theoretical conclusions are put forth as established facts, and not as questions demanding experimental answers. It were almost a work of supererogation to demonstrate to this audience that our medical journals too often publish articles that contain not the faintest trace of an idea which is not familiar to every student of medicine. So-called original articles, clinical lectures, reports of special methods of treatment, all repeat the well-known facts that are found in every "Student's Compend," until we despair of finding the little gold among so much dross. To what shall we look for the cause of this?

First: A mistaken idea among the younger members of the profession. An idea for which many of us whose heads are silvering are in part to blame. The eager, ambitious young man, fresh from the hospital, filled with his own knowledge and exuberant life, imagines that the road to fame and wealth lies through the columns of the medical press, and that all who have once seen his name at the head of an article remember it as though it were the writing upon the wall, and will immediately seek his services in consultation. Too often his ideal is given a halo by some older man, who says, Write something for the journals, write often, and let the profession know you. Let us confess this in garments of penitents, and in a more royal spirit let us seek to inspire the younger members of the profession with higher ideals which shall foster in them the spirit of personal achievement, shall develop a pride in quality, not quantity, of mental products, and that praiseworthy modesty which is content to learn until it is competent to teach.

The story or legend of that German savant, who, after a life devoted to the six cases of the Greek noun, mourned upon his deathbed that he had not confined himself to the dative case alone, comes to us like a fairy tale, or the record of an insane asylum. Yet let me tell you within that story, be it fact or fancy, lies the secret of noble achievement of human progress, the essence of the expanding, perfecting life of scientific work. It shows the soul capable of comprehending the infinite possibilities of science, and the self-forgetting ambition which can devote itself to the accomplishment of one thing worthily, whose sufficient reward is in the consciousness of having done faithful work.

When medical writings shall be filled with this spirit a year of the journal medical literature of the French, German, and English-speaking people can no longer be condensed into five small octavo volumes.

I mention as the second cause of medical redundancy the speculative interests of medical publishers, financial necessities of unsuccessful physicians, and conceit of self-appointed authorities. Each of these offers excuse for the establishment of a new medical journal, and another waif is born to feed on patent foods and peptonic mixtures. The doors are thrown wide open, and all aspiring young authors invited to enter without cost, where fame is found at every turn.

Gentlemen, I appeal to you, are these the hands by which our noble science shall be upheld; are these the spirits to suffer and endeavor to work for a life, if need be, that one new truth may be added to our store? They bring but broken stones and rotten beams, which are not worthy a place in our temple of science, whose walls bear polished tablets to the memory of men who labored for truth, not titles; for science, not self; for mankind, not money; for love, not lucre. As one enters upon an analysis of these requirements of higher medical culture and the demand of scientific medicine, he soon finds the essential element of each crystallizing into a single form about a single point, and realizes that the fundamental defect, the one first cause of the established fact that medical science has failed to keep pace with her sister sciences in this country, is a lack of high ideals among the mass of the profession; too often, also, among those who are justly its leaders. As artisans we yield the palm to none; when science passes into art we seize every weapon it offers, and wield them against the common adversary with such fearless force and skill as to cause even the forgers of these arms to confess our greater skill. But in the fields of pure science we still sit at the feet of the old world, and in our secret heart, at least, confess we are as yet hardly competent to be even critics of its teachings. As a body, we have yet to learn what scientific work means. That practical spirit and Yankee ingenuity, born of adversity and developed by opposition, which have made us the foremost nation on the globe in all that tends toward material prosperity, like the unfolding of a century plant, are the very elements that check, nay, forbid, the growth of pure science. Every other science but ours tends directly toward the production of material results, toward the production of wealth. It is America that has seized Jove's thunderbolts and bounded them in the service of mankind; has made them meek and patient servants, that do our bidding as does the muzzled ox, because the harnessed lightnings draw out the golden shekels. But he who seeks to bind in scientific laws the lightning of the mind, or trace the labyrinth that lies 'twixt cortex and medulla, must never hope to see the gleam of gold; he feeds alone upon the thought that generations yet unborn will one day know the worth of all his patient work and will rise up to call him blessed. It is not to be wondered at that the medical profession has been borne along with the multitude and has been given over to the search for patients and fees rather than bacteria and ptomaïnes. But it seems to me that the time has come when not the few (and all honor to these few who have been the advance-guard) but the many should be given higher ideals; should be lifted to that higher plane where intellectual work is valued for what it produces new. No man surpasses his ideal, and before we excel in pure science our ideal must be one of intellectual power, and not of material prosperity. But such ideals are not of individual creation, like cathedral towers, to be raised above contamination of earthly things into the clearer upper air, they must be the product of many hands and many minds—of united and concerted action. This seems to be the mission of our Academy, to be both the artist to conceive and form, and the guardian to preserve and sustain an ideal medical spirit of the profession of this city and our country. No great conflict is ever waged successfully without one controlling mind. We have in this city many strong minds, but they are like an army of undrilled recruits; much of their work is rendered useless because unconcerted; often it is simply repetition which might have been avoided, and the general result is weakened in authority and lessened in value because often incomplete and defective.

Medical men need a "clearing-house" as much as do the banks; they need an exchange where each may bring the results of his work, and learn what his fellow-worker may have done in way of support or opposition, and most of all we need a controlling spirit, a head to plan lines of attack, to bring together the scattered forces for their own and the general good. It is my ambition to see the Academy occupy this position, standing as the centre about which all the workers of our city may gather, giving them in return loftier ideals, inspiring in them stronger ambition to be truly scientific men, while it not only encourages, assists, and stimulates them to better work, but also rewards every praiseworthy achievement. In order that our Academy may thus become the centre of the scientific activities of the entire profession it must have a suitable home—a building that shall furnish accommodations for a large and well-selected library, with reading-rooms, and commodious meeting-rooms for all the medical societies of the city. Such a building the Academy is now struggling to establish. Our organization is no longer an experiment—it has passed successfully through the perils and contentions of its infancy, childhood, and youth, and is now entering its full manhood. The spirit of devotion to a high scientific purpose which actuated its founders, and which has always been one of its characteristics, has caused it from year to year to grow in professional esteem and public confidence, until it may truly be said that it is the strongest power in this city for the advancement of scientific medicine. It has outgrown its building accommodations, its library can no longer find shelf-room, and is constantly exposed to destruction, the building not being fire-proof. Its Sections crowd upon each other to such a degree that their work is crippled; it is unable to do the good work it might do on account of its limited space. The need of a new Academy building, with a fire-proof section for our library, is an urgent one, and if we shrink from our responsibilities in this matter, we shall prove false to the legacy received from those who gave so much of labor and sacrifice to bring it to its present growth and usefulness. As we recall the many distinguished men with whose lives it is interwoven, and who did so much to make it a centre of medical thought, are we not stimulated to greater endeavors, to greater sacrifice, to an energy akin to enthusiasm which never rests until it has realized the great thoughts and possibilities which gave it birth? What has already been accomplished gives assurance of ultimate success; never before have its Fellows been so united in opinion as to the immediate necessity of a new building. The Academy funds, with the pledges of money which have already been received, leave little doubt that, in the near future it will have a new building in every way adapted to its scientific work. To the accomplishment of this let each Fellow give himself heartily, not only by contributing himself, but by interesting his friends and

gaining donations from them, for, as has often been stated, each citizen is personally interested in everything that shall advance medical science. If the profession in this city can have free access to a large and well-selected medical library, with a scientific centre where they can contribute new observations, new facts, and new methods of treatment, subject to the criticism and judgment of their peers, and where each one shall criticise in a scientific spirit the offerings of others, the public will receive in their medical attendants greater skill, more careful and intelligent observation, and, as the medical profession as a body shall rise to a higher plane of scientific worth, the sick will turn less frequently to empirics for relief in their hours of suffering and in their struggles with disease; the sanitary safety of our great city will no longer be committed to unprofessional and unscientific hands, but will seek the protection of a broader-spirited and more enlightened profession, who, by wise councils and more practical methods, shall protect it from the ravages of those diseases which, it is being demonstrated each year, may be limited, if not altogether prevented, by the new and more advanced methods which are being formulated by a broader and more perfect sanitary science.

It seems hardly possible that intelligent wealth, whether selfish or broad-spirited, with such and kindred thoughts before them, will long hesitate to furnish the required means not only to build a new Academy building, but for so increasing its library that it shall become the central attraction for scientific workers in our city and the whole country.

But, Gentlemen, I would not speak only of the material interests of the Academy, of its building and library, I would congratulate you on the broader spirit which is being developed in its membership. We are each year becoming more tolerant toward the opinions of others. The links which bind together junior and senior members of the profession are being forged with greater strength. The jealousies and intolerance of cliques is fast giving place to liberality and good-fellowship. The questions now asked concerning a Fellow are not of his birth or of his school, but has he done good work, and is he likely to do more? We rejoice in no medical politics or medical ethics, a scientific atmosphere is pervading everything that is being done. Men who heretofore have stood aloof and who have done their work in special societies are coming into its Sections and making them effective. This centralization should go on until in the Academy would be found all the best thought and the best work of the entire profession. Let it become the fountain from which shall flow the purest streams in every department of medical science, a place where the young and old, the savant and the young enthusiast shall cross swords in that spirit of deference which one scientific worker is always willing to accord to his fellow.

The Committee on Drug Adulterations of the Missouri State Pharmaceutical Association desires to ascertain, as far as possible, how near the official substances dispensed in the State conform to the requirements of the United States Pharmacopœia. It requests each druggist in the State to select one official substance and procure a sample in his vicinity, and apply to it the pharmacopœial tests. Reports of work done for the committee will be tabulated and read before the Association at the next annual meeting, at Pertle Springs, June 18, 1889, and full credit will be given to persons having performed the work.

A Low Temperature.—Dr. Waugh showed at his clinic a lad, seventeen years of age, who had had a temperature during the preceding week of from 92.6° F. to 97.5° F. The temperature of 92.6° F. was verified by four thermometers, and was the lowest, Dr. Waugh said, that he had ever known a human being to have and survive.—*Medical Times* (Philadelphia), December 15, 1888.

MEDICAL EXPERT TESTIMONY.

Anniversary Address Delivered before the New York State Medical Society, February 5, 1889.

By SAMUEL B. WARD, M.D.,

ALBANY, PRESIDENT OF THE SOCIETY.

Gentlemen of the Medical Society of the State of New York: The laws of this country, and the practice in our criminal courts differ in some fundamental respects and in many details from those existing under other civilized governments. With us the accused man is entitled to and, in the vast majority of instances, secures every possible opportunity for defence. He cannot be compelled to give evidence which would tend in the remotest degree to criminate himself; his wife may not give evidence against him; his physician and his legal adviser are not permitted to divulge any information which they may have received in their respective professional capacities; he himself is always supposed to be innocent until he is proved guilty; and the jury are charged to give the prisoner the benefit of every reasonable doubt. If the accused has means he can employ what legal counsel he may select; should he be penniless the court assigns to some lawyer the duty of defending him.

Undoubtedly the practice of having counsel for the defence originated in the manly desire in our race that no injustice should be done to a man ignorant of the law. At the present day it is not considered at all dishonorable for most eminent counsel to espouse the cause of a prisoner whom they know to be guilty; and by carefully concealing evidence of the existence of which they are perfectly aware; by confusing and embarrassing witnesses; by taking advantage of every legal technicality; by the weight of their erudition and personal character; and by their persuasive eloquence with the jury they frequently succeed in making the worse the better cause appear. Their position is far different from that of the witness on the stand, who is supposed to tell the truth, the whole truth, and nothing but the truth. All this procedure may or may not be in strict accordance with the highest code of morals—may or may not, in the long run, be productive of the greatest good to the greatest number. It is certain that we as medical men have no more interest in it than any other body of reputable citizens.

But in a majority of criminal cases questions arise which no layman can answer, questions about which even members of our own profession may differ in opinion; the lawyers on both sides take counsel with the doctors, and the physician called to the stand to express a professional opinion becomes known as a medical expert.

There are other classes of cases, it is true, in which expert evidence becomes necessary, as in determining the strength of material used in constructing a bridge, a ship, or a piece of machinery. But every science is exact just in proportion as mathematics can be applied in working out or demonstrating its results; and, unfortunately for us, with the single exception of errors of refraction, mathematics does not come to our assistance in any degree worth mentioning. The capacity of a piece of Bessemer steel to resist a strain, longitudinal, lateral, or by torsion, is known with perfect accuracy within certain pretty narrow limits; it can be accurately expressed in figures; and it is not possible for truthful experts to make statements concerning it greatly at variance with each other. But the phenomenon with which we are called upon to deal are of an entirely different order; can rarely become the subject of experiment; are extremely complex in their nature—so complex that to isolate the component elements and prove how much influence is to be ascribed to each, is, up to the present time, simply impossible; it remains a matter of judgment and opinion. Nor is this condition of things the result of any lack of diligence on our part, or of native ability on the part of those who have in all the past ages applied their best energies to the study of medicine. It is simply inherent in

the complex nature of the problems presented to us for solution. Hence it is that medical experts may honestly differ from each other more widely than those in most other professions.

If, however, questions of law or theology could be submitted to the expert on the stand as those in medicine are, it would be easy for counsel to procure opinions more radically at variance than those expressed by members of our own profession. The opprobrium cast upon us is, to a certain extent at least, undeserved and unjust. In support of this statement we have only to note how counsel wrangle with each other over many points of law arising in every case that is argued; how the decision of the lower court is on appeal alternately reversed and affirmed in each succeeding higher one until the court of last resort is reached; and how even the highest courts in the land have at different periods rendered decisions incompatible with each other. Or imagine for a moment the divergence of opinion which would become apparent if a Materialist, a Unitarian, a Methodist, and a Roman Catholic were called upon the stand to express their views concerning justification by faith, the divinity of our Saviour, the doctrine of eternal punishment, or even the existence of a future state at all. And yet it is a matter of history that these men have had such profound faith in the eternal righteousness of their convictions that they would rather burn at the stake than abate one iota thereof. We can safely promise entire unanimity of opinion on all points as soon as this blissful state is attained by either the lawyers or the theologians.

The lawyer engaged on one side or the other of a criminal suit finds that medical points are necessarily to be raised, or thinks that they may be raised with advantage to his cause. We all know that almost every important case occurring in our daily practice presents some one or more features that are unusual, are rare, are sometimes almost inexplicable, and criminal cases are no exception to the rule. Counsel therefore looks about for some one of our profession to assist him. He presents his statement to a medical man and finds that his opinion is not of a nature to serve the purpose he has in mind. He goes to another and another, until finally he finds one who entertains opinions to suit him, or approximating thereto, and this one he engages to appear on the stand as an expert. One defect in the present law is that this man may be subpœnaed to appear in court at an inconvenient hour and distance, to the disappointment of his own patients, to the neglect of any or every other professional engagement, and kept waiting there an indefinite period of time for the paltry remuneration of fifty cents a day and eight cents a mile for travelling expenses. Such instances are of course exceedingly rare, and, as a rule, the medical expert is fairly compensated. In some cases the fee is agreed upon beforehand; in a few an effort is made to have it dependent upon the issue of the case—a condition which cannot be too strongly reprehended.

I believe that medical men, almost without exception, when they go into a case, fully intend and mentally resolve that they will not take sides; that they will make every effort when on the stand to live up to their oath and to be as impartial as the judge upon the bench. But even the judge does not always succeed in not taking sides, and the doctor, like the judge, is but human. Moreover, he, unlike the judge, has, in private at least, expressed an opinion, and he certainly wants to see that opinion prevail, primarily because he believes it to be the correct one, secondarily because it is his. In all callings, from religion to politics, every man innately rejoices in convincing others of the correctness of his views. Moreover, the lawyer is, collaterally at least, and in many cases primarily, working to win because his client is paying him. Had he been paid by the prosecution instead of the defence he would have taken an entirely different view of the case. He would not in either event tell an untruth; but he would under different circumstances attach very different values to the same item in evidence; would entertain very different opinions as to the credibility of witnesses; would cite another set of authorities and of precedents; would express to the jury an exactly opposite opinion and call upon them as good men and true to render a diametrically opposite verdict. The unfortunate medical expert is also human, subject to like temptations and influences as other men. He knows that the public puts him on a different plane from the counsel, and expects him to tell what he believes to be the exact truth, no matter whom it may help or hurt. But then there are many points about which a man may be in doubt; about which he may entertain one belief at one time in his life and another at another—I had almost said that he may believe as he chooses to believe—points that are not matters of fact, capable of demonstration, but absolutely and wholly matters of opinion. And he knows that as the case now stands the side from which he accepts payment expects him to believe and express opinions tending in a certain direction.

Moreover, it is certainly true that there are a few men in our profession who entertain opinions differing widely from those of the large majority. These opinions, expressed in private conversation or in medical meetings, result in very little harm, because they are estimated at once at their true value. But the holders of such opinions are precisely the men whom the counsel in a desperate case is desirous of retaining. By them he can show to the jury how uncertain and divergent medical opinions are, and throw doubt upon the reliability of the evidence produced by the other side. For instance, in a rural community I have heard a physician, whose fine personal appearance, army experience, large and successful private practice, and gray hairs gave weight to the minds of the jury to every word he uttered—every man on the jury knew him by sight and reputation, and a majority of them personally—I have heard this physician say that, in his opinion, "any man who used any splint in the treatment of any form of fracture was guilty of malpractice." Such monumental nonsense as this, is, of course, very rare; but the incident serves well to illustrate the abuses to which the present system of obtaining and using expert evidence is liable.

The physician selected as an expert considers his case carefully; he reads up the various authorities, paying, of course, considerable attention to those whose views agree with his own, and mentally remarking what sensible men they were, while the impression formed of those who differ from him is not nearly so complimentary. He looks up the records of similar cases in medical journals, and finally goes on the stand well prepared to answer truthfully the questions previously arranged to be asked him on the direct examination. During this investigation of the case it is sometimes curious to observe how the expert's opinions will become strengthened in the direction of the side which he has espoused. Without any real additional arguments having been brought to light he will incline to give more and more weight to facts which seem to favor his view, and become more and more inclined to make light of, or even to ridicule, facts or opinions which militate against him. He often ends by being honestly persuaded that there ought to be no manner of doubt on points which are in reality very doubtful and which at the outset he willingly admitted so to be.

When the expert goes on the stand he is first questioned by the lawyer on whose behalf he appears. The questions are hypothetical ones, supposed to be based on the facts proven on the trial. As a rule this is fairly done, and the expert has no difficulty in giving honest, straightforward answers.

The direct examination completed, the counsel for the other side takes the expert in hand and his trials begin. In some cases, in the majority of cases perhaps, he receives perfectly fair treatment. The cross-examiner simply endeavors to bring out all the weak points in his view of the case, to show how very weak they may be; that they are matters of opinion and not of fact; that other

honest men may take a different view of the case, and that an entirely different theory may not be wholly without foundation. Even though the treatment he receives be perfectly courteous the ordeal is a trying and disagreeable one. While he is honest and frank in his answers he must be very cautious in the wording employed, resting assured that every slip will be taken advantage of, and every response stretched to its utmost limit of construction, even if it be not entirely twisted out of its original meaning, when the case comes to be summed up before the jury.

At other times, and especially if the counsel is conscious of having a bad case, the expert may be treated very differently. Instead of its being assumed that he is a gentleman who has taken the stand for the sole purpose of giving information of a technical character and telling the exact truth, it is assumed that he is there for the purpose of aiding the side which called him, and sometimes it appears to be further assumed that he is scarcely hampered by the ownership of a conscience; he is treated as though it was known that he was lying, and every effort must be made to catch him at it. Questions are asked which cannot be answered truthfully without conveying an entirely erroneous impression to the jury; a categorical answer is insisted upon, when such an answer without an explanation is virtually a falsehood; questions are asked which are capable of several different subsequent explanations; others which have, in the form in which they are put, absolutely no meaning at all. On one occasion I recollect a lawyer's laboriously going over all the organs and tissues of the body from the scalp to the toe-nails, and being informed by the medical expert that, in his opinion, no one of the organs was the subject of pathological change. He then inquired if this man was sound from head to foot what ground he had to claim damages. The answer was that the functions of the nervous centres were so deranged as to prevent the claimant from pursuing his vocation and supporting his family. The expert was then requested to state to the intelligent jury precisely where these "functions" were located and what they looked like. By this time the expert was so thoroughly annoyed, angry, and disgusted that he declined, for the moment, to answer any more "stupid" questions—and woe betide the expert who for a single moment loses his temper.

Sometimes the "stupid" questions are put for the very purpose which was reached in the instance quoted, of confusing, annoying, and angering the expert, or of catching him in apparent contradictions, the explanation of which, to the average layman on the jury, is always tedious and often impossible. At other times the questions are not intentionally "stupid," but are so simply by reason of a lack of medical knowledge on the part of the counsel propounding them. Your President last year, in his inaugural address, speaking of medical experts, said: "Their testimony is often of little value, on both the direct and cross-examination, from the fact that the questions which they are called upon to answer are formulated by lawyers who have little medical knowledge; or if, as sometimes happens, a physician is employed to assist a lawyer, the lawyer not understanding the real import of the questions which his Mentor may suggest, perplexes the witness, and too often places his assistant in an undignified position, so that medical-expert testimony often disgraces our profession." When a lawyer is asking questions prepared for him by his medical expert for use in the examination, it is not uncommon to see a well-laid train of reasoning entirely destroyed by a single unexpected answer, when, in point of fact, the answer given was more favorable to his view than his medical friend had dared to expect or hope for, and the only trouble was that the counsel, not knowing enough of medicine to take advantage of it, abandoned his argument just when success was within his grasp.

While medical experts are, as a rule, men of large experience in the practice of their profession, each of them must, on some occasion, have gone on the stand for the first time. The position is then to him novel and embarrassing. He is unfamiliar with the rules of the court, the audience is a strange one, and the counsel is not averse, if it suits his purpose, to take advantage of these circumstances. Sometimes the lawyer will undertake the process of brow-beating the witness, repeatedly reminding him that he is under oath; cautioning him to be careful about his statements; gesticulating violently; and sometimes succeeds in getting the young man, if he is at all bashful, in such a condition of mind that it is impossible for him to recollect facts with which he is perfectly familiar, or to couch his answers in appropriate language. A favorite device with some is to ask the expert concerning all the possibilities of the case, not taking at all into account the probabilities. The timid expert is, perhaps, unwilling to admit a possibility, fearing that his admission will be afterward misrepresented to the jury as expressing his opinion of what was a probability. Under such circumstances I have repeatedly heard good, honest, careful men deny the possibility of an occurrence which, in their cooler moments, and when they did not fear that their meaning would be misinterpreted and misapplied, they would freely admit. Indeed, since it is a matter of record that an iron tamping-rod, five feet long and three-quarters of an inch in diameter, has passed vertically through a man's skull, scattering his brain more or less extensively over a forty-acre lot, the patient living more than twenty-five years afterward, and the accident resulting in no great permanent disability other than the loss of sight of one eye, it is difficult to swear that anything is impossible, and yet an infinity of possibilities are not in the slightest degree probable.

One of the most unfortunate results of this condition of things is, that it is frequently impossible to get the most substantial and reliable men among us to go on the stand under any circumstances, or for any consideration, and their places are sometimes taken by ambitious men, with more assurance than mental balance or experience, who see an easy way of attaining a notoriety which they mistake for well-founded fame, and whose main object is to be on the winning side, if that end can be obtained without stretching their consciences beyond the breaking-point.

If the present system of obtaining medical expert evidence resulted simply in the annoyance occasioned to medical men, or the disgrace brought upon the profession by an apparent or real difference of opinion expressed on the stand, there would be great cause for complaint on our part, though we could not expect much sympathy from others. But it is respectfully submitted that, above and beyond this, the present system does not tend to bring out the truth in the shortest and clearest manner; in fact, in many instances is believed to have resulted in a miscarriage of justice. Almost any lawyer of large experience in the conduct of criminal cases will tell you that he has been sometimes ashamed of the use which he has made of expert testimony, or else will gleefully chuckle over it. This matter was brought to the attention of this Society as long ago as 1879, when, in his anniversary address, Dr. Roosa so eloquently spoke of the evils attendant upon the present system.

Many remedies have been proposed, but up to the present time no action has been taken toward applying them. Dr. Loomis last year proposed that the questions to the expert should be framed by a medical man employed or appointed for that purpose. This would undoubtedly help matters to a certain extent, but would, after all, fall far short of accomplishing all that might be wished for.

A well-known judge of the Supreme Court has suggested that in each judicial district, a physician of eminence should be appointed by the court, whose duty it would be to appear as expert in every case where his services were required. This man would, upon the stand, be free from all the bias which arises from the fact that

he is paid by one side or the other, and a great advantage would, without doubt, be gained. But he would be subjected to all the annoyances and vexations of the examination, and the plan would be manifestly impracticable on account of the varied acquirements demanded of the expert in different classes of cases. The same man can scarcely be expected to be an expert in chemistry, surgery, medicine, and obstetrics, and, while the expert would be free from partiality toward either side, his evidence would probably be entirely satisfactory in only some one class of cases. Moreover, there are few medical men who would be willing to be placed in a position where the expression of their individual opinion virtually results in the imprisonment of a fellow-being for a term of years, or launches him into eternity. It is scarcely probable, again, that this plan would meet with the approbation of the legal profession, who would, naturally, desire that the views of each side should be presented in their best light.

In most cases where medical expert evidence is required at least two physicians are called to the stand, and in many cases a half-dozen. The remedy which we would suggest would be, that under such circumstances a board of three experts should be appointed by the court; one on the suggestion of the counsel for the defence, one nominated by the counsel for the prosecution, and a third by the court itself; that these experts should be paid by the court and the charge divided equally between the two sides; that to this board of experts should be submitted in writing the questions involving medical matters; that the answers should be submitted in writing and sworn to, and that medical witnesses should not be required to go upon the stand. In the event of the failure of the board to entirely agree a minority report might be admitted, and if each side desired to be represented by two or three experts instead of a single one, there would be no objection to such a course.

The adoption of this course would certainly result in obtaining from medical experts opinions free from the bias which arises from the expectation of pecuniary reward from either side, the unseemly antagonisms between the expert on the stand and the cross-examining counsel would be avoided, and the ends of justice be more speedily and surely attained.

THE TECHNIQUE OF VAGINAL HYSTERECTOMY.[1]

By JAMES B. HUNTER, M.D.,

SURGEON TO THE WOMAN'S HOSPITAL OF THE STATE OF NEW YORK.

In order that a capital operation shall commend itself to the profession two facts must be demonstrated in regard to it: First, the immediate mortality from the operation must be small; second, the results, immediate and remote, must be such as to show that the benefit to the patient is sufficient to compensate for the risks incurred. In regard to vaginal hysterectomy, ample evidence as to the second point has already been furnished by foreign writers; most recently by Secheyron. It may be assumed, therefore, that vaginal hysterectomy in suitable cases of malignant disease of the uterus has taken its place among the justifiable operations. My purpose is to deal chiefly with the first point, and to show that the operation may be so performed as to render the mortality very small. If it can be shown that the more radical operation entails but little more risk than does a high amputation, few surgeons would hesitate as to which operation should be performed. It may be mentioned here that in all capital operations statistics based upon a small number of cases have very little value. The more difficult the operation, the greater will be the mortality in the earlier operations of every surgeon. Experience counts very largely in such operations as vaginal hysterectomy.

[1] Read at the meeting of the Medical Society of the State of New York, February 5, 1889.

The immediate dangers of this operation are shock, hemorrhage, peritonitis, and septicæmia. Many of the operations reported have occupied a long time, some of them more than two hours, and some nearly four. In such cases shock is very apt to follow. Rapidity may be considered an important element in all serious gynecological operations. A study of the cases of hysterectomy reported by the German surgeons, notably Martin, will show that the cases in which the patients succumbed to shock were those in which the operation was prolonged from one and a half to three hours. Much of the time lost is occupied in securing the important vessels by ligature. Pean certainly conferred a great benefit on surgery when he demonstrated the application of the hæmostatic forceps to vaginal hysterectomy; and it may be noted here that his claims are prior to those of Richelôt. I shall attempt to show that, both theoretically and practically, the forceps in this operation have a vast advantage over any form of ligature. I have now used the forceps for the principal vessels in eleven cases of vaginal hysterectomy in the New York Cancer Hospital, with two deaths, one from acute Bright's disease, and one from secondary hemorrhage in consequence of an imperfect forceps. In eight cases I have used no ligatures of any kind. The method of using the forceps will be made more clear if the other steps of the operation are described somewhat in detail.

The first steps of the operation are substantially the same whether the forceps or ligature is to be employed. One assistant should stand on the right of the operator, and on him devolves the chief responsibility. A second assistant, or an experienced nurse, is seated on the left of the operator, to hold the speculum and do anything else that may be necessary. The instruments are placed on a low table, within reach of the operator and his chief assistant. One nurse is assigned the sole duty of caring for the sponges. I prefer to have the patient on the back, brought well down to the edge of the table, the limbs being flexed and supported by assistants, or by the crutch, as in operations on the perineum. The largest Sims speculum is then introduced, after thorough irrigation with a two per cent. creoline solution. The uterus is then drawn down by Bernay's uterotractor. By pushing it back in place the line of union between the vagina and cervix is made clear, and at this line the incision begins, the uterus being first drawn downward and backward. Broad retractors are useful in some cases for lateral separation. With a curved, blunt-pointed scissors the bladder is carefully separated from its attachment, a sound being kept all the while in the bladder, and manipulated by the chief assistant. The finger is then passed up until the peritoneum is reached, when that part of the operation is abandoned, the peritoneum not having been opened. The uterus is then drawn forward, and a similar dissection is made on the rectal side. It is not important whether the anterior or posterior section is made first, but it is easier generally to do it in the order described. The next step is the separation of the lateral attachments. It is well to cut very cautiously here, and also with scissors, lest the uterine artery be prematurely severed. The peritoneum may now be separated anteriorly, and the finger made to reach the upper border of the broad ligament on one side. At this stage of the operation, I usually pass a strong silk ligature temporarily over the broad ligament, by means of my projecting needle, and can thus control the upper border and draw it down in applying the second forceps. The forceps are then applied close to the uterus, and in such a manner as to include only the uterine artery. The handles of the forceps when properly placed should be tied with silk, to guard against the possibility of their becoming loose. The tissue included in the forceps may then be cut close to the uterus, the operator watching carefully for hemorrhage. A second forceps is then applied higher, and made to include the remainder of the broad ligament and the ovarian artery. The same process may then be repeated on the opposite

side. An attempt may then be made, by seizing the fundus with a large hook, to antevert the uterus. The utero-sacral ligaments usually need to be divided at this stage of the operation, and may be seized with a long forceps before division. It is well to seize *every bleeding point*, artery, or vein, with forceps, some of which may be removed when the operation is complete. According to circumstances, the uterus may be drawn down in the axis of the vagina, or it may be anteverted, or retroverted. The four forceps guarding the important vessels should all be secured by tying the handles, after they are properly applied. The danger of prolapse of the intestines during the operation has been greatly exaggerated. Ordinarily they do not come into view at all. If, at any stage of the operation, the ovaries or tubes are seen, it is better to remove them, using a silk ligature, or, if practicable, a light forceps. The vagina is then lightly packed around and between the forceps with creoline, or iodoform gauze. The use of styptic cotton at this stage is objectionable, as it is very hard to remove, and leaves an ugly cavity. If gauze or cotton in small quantity is passed up high, it should always be secured by strings to make sure of its easy removal. The projecting handles are enveloped in a mass of cotton, and so supported that they cannot drag or cause pain. If there is a sufficient supply and variety of forceps in readiness, ligatures will very seldom be necessary, nor will there be much opportunity for using the cautery, which I have never yet had occasion to employ in this operation. The danger of injuring the peritoneum or intestines is greater with the cautery than with other means. The patient is then put to bed and treated as after any serious operation. The bladder is emptied by the catheter at proper intervals. The bowels are moved on the third day, generally by means of three or four half-grain doses of calomel, in triturated form, given at intervals of an hour, and followed by a saline aperient, usually a seidlitz-powder. The absence of pain after this operation is somewhat remarkable, and morphine or other anodynes are rarely necessary. Light nourishment, as milk and lime-water, milk and Vichy, koumyss, or peptonized milk, is given as soon as the stomach will tolerate it, which is generally from twelve to twenty-four hours after the operation. The forceps are removed after thirty-six hours; those which are applied to the large vessels, being tied, can be distinguished from the others and removed last. It is often necessary to leave in the vagina six or eight, or even ten pairs of forceps. In one case, which did remarkably well, I left fourteen pairs attached. As the instruments give some annoyance by their weight and bulk, those which are attached to the less important points may be removed at the end of twenty-four hours. No force is necessary to remove the forceps, which usually come away almost of themselves as soon as they are unclasped. Sometimes a very slight rotary movement is necessary to detach them. The least important forceps should be removed first, and those securing the large vessels last. When the latter are removed, the gauze is carefully withdrawn, and fresh gauze put in its place. It will be found, practically, that the margins of the peritoneum fall together of themselves and close the opening. No sutures are necessary for the purpose of uniting the edges of either peritoneum or vagina. When the forceps are removed there is generally some discharge, and the gauze is often saturated with a serous fluid without odor. No injections should be used at this time, nor should the speculum be introduced, or any vaginal examination made, without some special reason. A light tampon of gauze is then introduced, unless there is a free or offensive discharge. If proper care be taken there need be no erosion or irritation of the vulva by the forceps. This is a very important point as concerning the subsequent comfort of the patient.

During the first week a light tampon of gauze is introduced once a day to give support to the vagina and to insure drainage. In no one of my cases has there been any hemorrhage whatever after the forceps were removed. No vaginal injections should be given till after two days. There has seldom been any rise of temperature, there has been no peritonitis in any case, and no septicæmia. In some of the cases a large friable mass, the epitheliomatous cervix, has been broken down in the vagina during its removal, but in no case has there been any evidence of infection from that cause. At the end of the first week the discharge becomes very slight, and a digital examination shows a small opening in the vault of the vagina, barely admitting the finger. At the end of the second week there will be felt merely a puckered cicatrix, which in time becomes still smaller and closes entirely. I have never known any fistulous opening to remain. Healthy granulation has always taken place. The patients are allowed to sit up in bed at the end of the second week, and to get up at the end of the third week. One patient left for her home, at a distance, exactly three weeks from the day of the operation. All injections have been discontinued at the end of the third week, and no subsequent treatment has been necessary. When there has been any sign of a recurrence, it has been in the edge of the wound, at a point easily accessible for treatment. In this particular there is an advantage over the operation of high amputation, in which recurrence is not so easily detected, or treated when it does occur. Adhesion of the intestines to the wound has been reported in three cases. It has not occurred in any of my cases, and seems no more likely to occur after vaginal hysterectomy than after an ordinary laparotomy. Every precauti is taken to render the operation aseptic, but on account of the condition of the cervix this is often impossible. There has, however, been no evidence, in any case, of infection from that cause. There has been no prolapse of the intestine, and there has been no case of septicæmia. The evidence has all been in favor of the fact that shortening the operation lessens the danger of shock. The patients who recovered had all a remarkably easy and uneventful convalescence.

It may be safely said in favor of the use of the forceps in vaginal hysterectomy, that they save time, that they are easier of application than the ligature, and that they make more firm and permanent compression. In one case in which I used the ligatures, they did not come away for three weeks, and very much interfered with the process of healing. The forceps also favor drainage at the time when it is most necessary. Their removal causes no pain, and requires the use of very little force. There is less danger of injuring the ureters with the forceps than with the ligatures, as they can be applied more closely to the uterus. In using the ligature on the broad ligament there is always a possibility of retraction, and in the operation in question it is exceedingly difficult to reach the broad ligament when it has retracted. More traction on the tissues is required in applying a ligature than in applying the forceps.

Finally, to the inexperienced operator—and there must always be some inexperienced operators—the forceps offer a much better prospect of success than the ligature, as less skill is necessary for their application.

I have used a variety of forceps, including those of Richelôt, but now prefer a strong Tait's forceps to any other. I am satisfied that it is better not to attempt to include the whole broad ligament in one instrument. Two small forceps are better than one large one, and are much more easily applied.

2 East Thirty-third Street.

The Laborer is Worthy of His Hire.—In Los Angeles, Cal., no one is permitted to practise medicine until he has signed a fee bill and takes oath that he will abide by it. This prohibits him from charging less than a certain rate, but does not limit him in placing an estimate on his own services. The custom is to collect at the time the service is rendered.

THE EARLY RECOGNITION OF CANCER OF THE CERVIX UTERI.

By HENRY C. COE, M.D.,

NEW YORK.

Some apology seems necessary for introducing a subject on which so much has been written. The writer, through his connection with the New York Cancer Hospital, has had an opportunity of studying the histories of many incurable cases, and, almost without exception, the patient has stated that she did not know what was the matter with her until the disease had made such inroads that a radical operation was out of the question. Her physician had not recognized the existence of cancer until it was too late. It did not seem as if the higher education of the general profession in regard to gynæcology had been extended to the early recognition of malignant disease of the uterus. If this was the case we would not encounter so many inoperable cases. The writer would not be understood as harshly criticising general practitioners, since they were often prevented from making a vaginal examination by considerations of an ethical character, which did not stand in the way of the specialist—especially the opposition of the patient herself.

The writer proposed to confine himself strictly to the practical side of the subject—avoid all disputed points in pathology. He desired at the outset to call attention to certain popular errors with regard to the symptomatology of malignant disease, all of which he had repeatedly seen confuted in both hospital and private practice. The advanced age of the patient, "cachexia," pain, hemorrhage, and offensive vaginal discharge were regarded as pathognomonic of malignant disease. As a fact, over twenty per cent. of the patients were below forty, and they frequently presented every evidence of robust health, even in cases of advanced disease. Pain was a later symptom, and was often notably absent. Hemorrhage was often not sufficient to deserve the name, and very rarely threatened life. The foul, watery discharge, so often alluded to, was sometimes absent, even when the ulceration was quite extensive.

The most common symptom noted in connection with incipient epithelioma of the cervix was bleeding. This might be merely an increase of the menstrual flow (especially in women near the climacteric), but the most significant form was that called by the Germans "atypical" hemorrhage, *i.e.*, a slight show at irregular intervals between the periods. It might be simply a pinkish discharge. This was especially significant when occurring in women after the climacteric. Bleeding after coitus was always significant, and called for a prompt examination, even if no other symptom was present.

A profuse leucorrhœa in a woman who had passed the climacteric should awaken suspicion, though no odor could be detected. Pain, of the severe lancinating character present in the advanced stage, was absent. Vague shooting pains in the pelvis in women previously free from them were of suspicious import. These pains may extend down the thighs, and be mistaken for sciatica (as in a case under the writer's care).

The symptoms mentioned should lead the attendant to make a vaginal examination, when he will find the cervix usually lacerated, large, thickened, and having peculiar nodules along the edges of the everted lips. At a somewhat later stage the cervix will feel more like a mushroom. Firm pressure is not painful, but may cause slight hemorrhage. No odor will be noted on withdrawing the finger. The uterus is somewhat enlarged, but movable, and there are no evidences of perimetritis. As seen through the speculum, the cervix may present the ordinary appearances seen in erosion (the boundary line between which and cancer is often determinable only by the microscope). The ovula Nabothi are usually present in erosions, says Schreider. If there is a sharp separation between the diseased and healthy spot this is suspicious. The cancerous nodules appear as glistening, yellowish nodules, elevated above the level of the healthy tissue. General hardness of the cervix, in connection with extensive erosion, was always a sinister sign. In case of doubt, excise a wedge, including the deep fibro-muscular tissue, and examine microscopically. In the case of a simple erosion there was loss of surface epithelium, and glandular hyperplasia; atypical cell-processes, dipping down into the tissues, or groups of epithelial cells, showing an alveolar arrangement, pointed to malignant degeneration. How difficult the diagnosis of incipient cancer might be was shown in the case of the late Emperor Frederick. In certain cases the pathologist would be unwilling to give a positive opinion, simply calling them "suspicious." The indications for treatment in such cases were sufficiently clear. The prognosis in such cases depended upon the early recognition of the trouble. In the case of incipient cancer absolutely confined to the cervix, there was no reason why the patient should not be completely cured by excision or high amputation of the cervix, which should be tried before resorting to complete extirpation. The writer favors entire wedge-shaped excision of the cervix in every suspicious case, whether really malignant or not. It was not sufficient to simply repair the laceration. Patients with extensive erosion were always in danger of the trouble passing the boundary between the benign and the malignant. The diseased tissue should be thoroughly removed. Local applications, caustics, etc., were not to be thought of; the cervix must be removed with scissors. In this way many lives would be saved or prolonged, which are now lost, either from extension of the disease or from too heroic procedures at removing it, which are resorted to too late.

A CONTRIBUTION TO THE SURGERY OF THE SPINE.[1]

By ROBERT ABBE, M.D.,

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The surgery of the spine is one of the new chapters soon to be written, from which much may be expected. As yet, however, so little work has been done or published that statistical tables upon the subject are untimely and of little profit.

It should be a surgical axiom that every case of operative interference should be published, and I shall therefore present concisely, for our study, two cases that have recently come under my care, deducting such practical lessons as may be deemed important. I have the pleasure of showing you the patients themselves.

Extra-dural tumor of spine—Paraplegia complete—Operation—Recovery.—The first case is a man aged twenty-two, who was in excellent health up to January of last year, when pain in his back was his earliest symptom. He had no other sign when admitted to St. Luke's Hospital, in March following. The spine was flexible and without deformity. A slight fulness was thought present in the soft parts of the right of the spines of the ninth and tenth dorsal vertebræ, where tenderness on pressure and some pain on motion were apparent.

Dr. Kinnicutt, under whose care he came, treated him by iodide of potash, quinine, blisters, and other remedies, though being unable to elicit any history of syphilis or tuberculosis, and quite soon diagnosed a tumor of the spine. Four weeks later the swelling of the soft parts had markedly increased, so as to make an induration of the parts two inches wide by three inches along the spine. Tactile sensibility now began to be disturbed in both legs, and then muscular power began to go. At the same time there was a line of hyperæsthesia around the abdomen which marked the limit between the anæsthesia of the legs and the normal abdominal skin. Two weeks later he could not stand without support. After this his power in

[1] This case was shown to the Surgical Society of New York, October 10, 1888, and mentioned in the New York Medical Journal, November 24, 1888.

the legs rapidly disappeared. He had annoying, uncontrollable twitchings of the legs, which were cyanotic when allowed to depend from the bed. The spine became rigid and very painful. The legs absolutely anæsthetic; abdomen tender and hyperæsthetic. A wasting hectic had set in. On May 10th he was growing rapidly weaker; had constant intercostal pain in the lower ribs, with girdle pains about the limiting line of disease. There was involuntary muscular twitching, with increasing incontinence of urine and fæces. By May 25th, affairs had gone from bad to worse, the man lay in an apathetic condition, suffering from the slightest motion of the spine, and with girdle and intercostal pains unabated. The presence of an active hectic led one to fear a serious general infection. A final consultation was held May 29th, at which Drs. Seguin, Weir, Peters, Kinnicutt, Bull, Ridlon, Murray, Shaffer, and myself were present. Previous explorations of the swelling had shown nothing, but to-day a drop of thick, shreddy pus was obtained, and on the following day I operated.

May 26th.—Under ether, an incision was made, six inches long, close to the spines, from the sixth to the twelfth dorsal. The laminæ being uncovered, some thick broken-down tissue and pus were scraped away. The laminæ were already bare of periosteum, and the spines and laminæ of the eighth, ninth, and tenth were cut away by rongeurs. This revealed a dense mass of tissue and desiccated pus occupying the entire calibre of the canal, and extending up and down in all two and a half inches. This compressed the cord tightly against the anterior wall. It was rapidly and thoroughly removed by a sharp Volckman spoon, until sound bleeding tissue was left on every side. The cord was not seen to pulsate. The cavity was packed with iodoform gauze—after bichloride irrigation—and an antiseptic dressing and plaster-of-Paris jacket applied.

On the eighth day, sensation began to return. In the fourth week he began to move his left leg and the toes of the right. His fever rapidly left. Pain disappeared, and appetite returned. In six weeks he moved both legs well. In ten weeks he went about in a rolling-chair. The third month, walked with crutches. At four and a half months, walked pushing a chair.

It is now eight months, and you see he walks well without support, is stout and hearty, and since the operation absolutely without fever, or evidence of tuberculosis. The tumor tissue was examined for bacilli, but nothing but cellular tumor elements and pus found.

The clinical evidence leads me to believe the neoplasm began between the theca and the posterior arch of the vertebræ, and then broke down, involving the bone. The bodies of the vertebræ are perfectly sound.

The second patient is one whose malady is more complicated, whose recovery is not yet so brilliant, but whose operation stands, as yet, quite unique. Intractable brachial neuralgia, nerve stretching, amputation, and finally, division of posterior roots of the sixth, seventh, and eighth cervical. Improvement.

Mr. I. R. T—— is forty-four years of age, an iceman. He was referred to me three months ago by Dr. C. L. Dana, of New York, to see if I were willing to undertake an operation, conceived by him, to relieve the patient of one of the most intractable of neuralgias of the right brachial plexus, appearing in the arm and forearm. The essential features of the operation were carried out as planned from the first by Dr. Dana. The patient's history is as follows:

Prior to this trouble, he had no disease—rheumatism, malaria, or specific. During the war a shell explosion left a small piece of it in his left shoulder, which was extracted on the field, and left only a small flesh scar; never otherwise injured. One year ago last May, he spent a day putting a zinc lining in a large butcher's refrigerator, and on the night following he first had a throbbing pain, localized in a single spot on the posterior surface of the right forearm, above the middle. The pain kept him from sleep. It was continuous at that site, but about one week later, there was added a paroxysmal pain giving a peculiar twitching sensation in the thumb, index, and middle finger of the same hand. He was treated by electricity, blisters, counter-irritants, and internal medication, by excellent doctors, but his arm grew steadily worse. The pain still localized over the forearm, and supplemented by the paroxysms of painful twisting sensation. There seems to have been distinct muscular spasm with the sensation of pain.

During the spring of last year there had ensued a disablement of the hand. The fingers were not readily closed nor extended. The hand was kept in a stiff position, the fingers semi-flexed. The forearm and hand were slightly emaciated. There was atrophy of muscle in the interosseous spaces. Dr. Dana and others thus saw him, and a diagnosis of ascending neuritis was arrived at. At this time he came under the care of Dr. W. T. Bull, at the New York Hospital. After a week the patient begged an operation, and the doctor stretched the posterior interosseous and ulnar nerves. The pain was not improved. If anything, it was worse.

On July 16th, at the patient's earnest request, the arm was amputated by Dr. Bull above the humeral insertion of the deltoid, and above any site of local pain heretofore complained of. The wound healed by first intention. As far as the eye could judge, all nerves in the arm were in a normal condition. When the wound had healed it was found there was no abatement of pain. It still had a "drawing" character, and he could feel the fingers twist just as if they were on. He left the hospital August 1st, if anything, complaining of more pain than before. He then came under the care of Dr. William Kemp, of New York, who again sought Dr. Dana's counsel. The patient had now got in the habit of taking morphine, one half grain every hour, to destroy the pain.

Of this interview Dr. Dana writes me thus:

"On September 25th I examined him again. The arm had been removed. The patient said he felt no better. There were twitchings and tonic contractions in the muscles of the stump. The patient had the Brauch-Romberg symptom, swayed in standing, and had a tendency to fall to the right when walking with eyes closed. Knee-jerks exaggerated and ankle clonus in right leg, all of which might be due to the morphine he was taking. There was much stiffness in the neck muscles. The patient could not rotate his head completely to the right, nor draw the head down to the right shoulder. The diagnosis, so far, had been neuritis—and of this there could be no doubt. The question was whether it might be due to a tumor or inflammatory process, either extra-spinal or extra-dural. An exploratory operation was advised with the idea, if no tumor was found, of cutting the posterior roots of the nerves transmitting pain. If it were a tumor, *that* could be removed. If it were ascending neuritis, cutting or resecting the nerve might stop it; while cutting the posterior roots would cause an ascending degeneration and destroy the sensory tract, even into the spinal cord."

At this juncture he went to Dr. Seguin for a month, and returning to Dr. Dana, was sent to me at St. Luke's Hospital. His condition then was as follows:

November 2d.—Had grown thin, was careworn and hollow under the eyes. Appetite fair, tongue coated. No fever. He gives evidence of sharp pain, every few minutes, in the stump of his right arm, and usually doubles over and grasps the stump with the other hand. When asked about it, says it jumps and the stump draws to his side when the pain shoots into the hands and fingers, as if they were still on, and he can feel them all drawn up. The pain seems to be genuine, and the recurrence every five or ten minutes. He says also that they keep up all night. Muscular atrophy is beginning to be marked about the shoulder, either from the disuse or degeneration. The deltoid, supra and infra spinati, and biceps are atrophied; while the lateral dorsi and pectoral major are short and thin, but still act strongly when called upon. A small, tender neuroma of the musculo-spiral nerve in the stump,

can be felt, and on pressure gives the same pain as is generally complained of.

November 7th.—Dissected out the neuroma under cocaine.

November 24th.—Not relieved by the removal of the neuroma. Urine 1.024, no albumen or sugar. Some oxalates.

December 31st.—Operated under ether, Dr. Bangs assisting, in the presence of a number of prominent neurologists and surgeons.

The usual surgical precautions were carried out. An incision was made along the ligamentum nuchæ on the right side, from the third cervical spine to the first dorsal. The soft tissues were quickly separated from the spine, and the right half of all the laminæ well out on the articular processes. With rongeurs the laminæ were quickly gnawed away from the spine to articular processes—thus bringing into view the rather full pulsating dural membrane of the cord.

The seventh, sixth, fifth, and half the fourth nerves were thus treated. Severe venous bleeding from under the latter was only controlled by an aneurism-needle protected by cotton and hooked up beneath the bone. Over two inches of dura was exposed. It was soft and allowed the finger pressure to feel the cord. No tumor was thus detected, nor did a director passed up and down the canal feel anything like tumor. There was no inflammation or disease of the hard parts. With a heavy curved hook I then explored the intervertebral foramina, and drew back the sixth nerve by hooking under it and pulling gently, so that a short loop of it was raised on my hook outside its point of exit from the dura, but inside the vertebral canal. Upon this root, thus raised, I applied a small metal electrode, while the opposite pole (a sponge electrode) was held on the back. Dr. Dana noted the effect. The same was tried on the seventh nerve, with less effect. My own observations, as did those of Prof. Markoe and others, coincided with Dr. Dana's. He writes: "On the day of operation, a faradic battery of one cell, moderate current, was used. A sponge electrode on the back, a metal point electrode on the nerve. When applied to the sixth nerve just external to the dura, it caused contraction of the supra and infra spinati, rhomboid, latissimus dorsi, pectoralis major, teres, and deltoid. The results of electrizing the seventh nerve were not so satisfactory, it not being certain that the point reached that nerve alone (on account of fluid that collected around the electrode). It was impossible to drag out the fifth nerve without exciting more hemorrhage from the venous sinus." The eighth nerve also was hidden below the bone, and it was thought enough had been done. The sixth and seventh were then again dragged up from their beds and cut square across just outside the dura. Both motor and sensory roots lie together at this point, so that they must have been severed. The wound was packed, entirely open, with iodoform gauze covered by a voluminous gauze dressing. He bore the operation well, but soon found his old pain seemed much the same—still low down in the hand.

January 2d.—Forty-eight hours after operation I felt that I ought to divide at least one more branch (the eighth), if I could do so, and if possible to examine the spinal cord, inasmuch as Horsley had not detected the tumor in his celebrated case until he had opened the dura. I therefore determined to do this, place the man prone, without ether, and open the dura, so as to get a clue to the sensations of the nerve-roots when handled. With the assistance again of Drs. Dana, W. T. Bull, and many others, I operated.

The patient was placed under a brilliant light, face downward, so as to maintain the operated part as the highest of the spinal axis. I carefully removed the packing, revealing a large, clean, dry wound, at the bottom of which lay the dura, throbbing and sound. Puncturing it with a knife, I slipped in a fine director and slowly let out the spinal fluid until it ceased to run. Then I slit up the dura for one and a half inch. The cord and membranes looked sound. The effect of evacuating two ounces of spinal fluid (carefully collected and measured) was practically nihil. The pulse did not change, and he experienced no sensations or pain. The dura was scarcely at all sensitive to cutting. I now picked up the roots of the eighth nerve within the dura at the level of the seventh nerve outside.

It looked normal, but I cut it close to the posterior spinal columns, and then snipped off a fourth-inch for microscopical examination. Handling this nerve-root gave him the greatest pain of anything I had done, and of a kind exactly corresponding with that which he constantly suffers. I had reason to hope, therefore, we had reached the offender. In addition I cut also the posterior roots of the seventh nerve close to the columns of the cord.

In two operations, therefore, I had cut the sixth nerve, both roots, outside. The seventh, both roots outside, and also the posterior root inside. The eighth posterior roots only inside the dura. It was observed that the contact of even a blunt soft instrument to the posterior columns gave a sharp agonizing pain over the entire body, the patient crying out, "Ah! I *can't stand* it."

We again tried the battery, and with regard to it Dr. Dana writes: "On the second trial, the patient being conscious, stimulation in the same way—of the peripheric end of the cut sixth nerve—caused contraction of the supra and infra spinati and rhomboid. Of the seventh nerve, contraction of the pectoral, latissimus dorsi, and adductors of the arm, with pains such as he usually suffers. Of the eighth nerve, similar contraction and intense 'drawing pain,' exactly such as is usually felt."

The slit in the dura was now sutured with fine catgut. A little cocaine had been injected along the cut wound half an hour before, and this allowed of painlessly suturing the entire length of the wound. Immediate union was thus obtained by second intention, and leaves a small linear scar. The patient had more or less of pain in the arm in the next ten days, but it changed in character. It no longer went down into the fingers. It was a "drawing of the stump," as he expressed it. It ceased to go up on the shoulder as it once did. He was allowed enough morphine to quiet pain for eleven days, when I deemed it best to let him sit up and stopped the drug entirely.

He missed it, but quickly got used to it, and since has had even less pain than when he was getting his morphine to quiet it. He walked freely at the end of the third week, and soon went in the open air. His gait is now as steady as for months past, and he can walk a crack in the ward any distance.

His temperature was 101° F. on the second day, and 102° F. on the fourth, but declined from that to normal on the tenth. The appearance of the upper arm and stump is one of increasing atrophy. There is no voluntary movement of the supra- or infra-spinatus, deltoid, or biceps, but there is of the latissimus and pectoral, though both are shrunken from disuse. There is anæsthesia of the skin of the entire outer side of the arm from the deltoid region downward, extending across the shoulder from the centre of the clavicle to the centre of the scapula. This area of the skin showed a short period of irritability, without sensation, from the fourth to the eighth day after the root section, as shown by getting quickly and persistently suffused when brushed over or handled; but when pinched retaining an extreme blanching at that point which did not recover for two or three minutes. This entire area is now, however, normal in appearance.

In considering the lessons drawn from these cases it is to be remembered that in any path of study knowledge never comes entire at once, but piecemeal. Truth presents herself in fragmentary form, and we put the pieces together; so that, while I do not present the case of cervical operation as a brilliant result as yet, so far as completely relieving the pain goes, I offer it as a unique case making a quick recovery from an operation, as conceived by Dr. Dana, at once simple and scientific.

The other case of spinal pressure from a degenerating tumor successfully operated on, and restoring the man to health, is the only one I find on record in this country, though others have been recorded abroad—MacEwen, of Glasgow, claiming to be the first to accomplish this result, five years ago. Since that time he has operated on five cases, two of whom died of tuberculosis.

Most cases of pressure-myelitis have no striking hectic fever. Yet two of MacEwen's cases had at the time he operated, and these two died. He, therefore, draws the conclusion that no case is "fit for operation in which the temperature does not run an even, regular, and continuously afebrile course." He shows thereby a suspicion that the pressure-myelitis paraplegia, plus the hectic, indicates a diffusion of tuberculosis. The case you have seen, therefore, stands of itself as an argument to refute this error, for the removal of the one focus of trouble entirely dispelled the hectic.

MacEwen's cases show, happily, that improvement does not cease at six months. His patients, just able to get along without crutches at six months, can walk many miles two or three years later.

With regard to the case of neuralgia of the arm, no indisputable diagnosis had been made prior to my operation.

The man had neuralgia, but the cause of it, even such eminent neurologists as Drs. Dana, Seguin, Amidon, Starr, and others, were not united on.

It was believed to be ascending neuritis, but might be spinal tumor, or a delusional pain (Seguin) aggravated by morphine.

The language of pain is not at all times plain. If it were an ascending neuritis, could we expect to relieve it either by nerve-stretching, amputation, or neurectomy?

It has always been acknowledged difficult to get ahead of a neuritis of this type. The late Dr. Sands operated once on a similar case to this man's, by excision of the brachial plexus all the roots in the neck, but found it very hazardous and unavailing. It also left the arm powerless. It seems to me reasonable that the posterior roots should be severed alone, as they alone transmit sensation to the cerebrum.

The operation has endorsement from neurectomies of the sensory fifth nerve for the cure of tic douloureux.

There remains one point for consideration which this case of section of the sixth and seventh nerve will help to elucidate.

The exact supply of the nerve-roots to the muscles of the arm has been somewhat a matter of conjecture, and frequently subject to revision.

William Thorburn, of Manchester, has only very recently published the results of study of many cases of fractured cervical spines, in which nerve-roots were injured with varying paralyses. The conclusions from this attractive and well-observed series of cases seem to leave some gaps in testimony, and errors which further study will correct. My case gives some points of value.

Thorburn places the pectoralis major and latissimus dorsi muscles in the supply of the sixth root. Yet in my case these are not paralyzed, though I have cut the sixth and seventh. Therefore these must be largely innervated from the fifth.

That there was no error in identifying the sixth, is shown by the supra- and infra-spinati supply and the anæsthetic area.

STATISTICS OF CREMATION IN EUROPE.—*The Flame*, the organ of the Cremation Society of Berlin, gives the following as the number of cremations which have occurred in Europe up to August, 1888: In Italy, 998; Gotha, 554; Sweden, 39; England, 16; France, 7; Denmark, 1. The number reported in America during the same period is 287. The following is the total membership of cremation societies in the countries mentioned: Sweden, 3,012; Denmark, 1,326; Holland, 1,128; Germany, 612; Italy, 580; Hamburg, 438; Switzerland, 390.

Progress of Medical Science.

EXANTHEM DUE TO SULFONAL.—Dr. Engelmann has observed an eruption following the use of thirty grains of sulfonal in a patient having insomnia. The sleeplessness was due to recurrent attacks of dysmenorrhœa. The woman took the sulfonal at seven in the evening, without hypnotic effect however. The following morning a bright scarlet exanthem appeared on the chest. There was moderate itching, but no other symptom of disease. The rash spread over the arms and abdomen, and then after two days disappeared, the itching meanwhile having become more troublesome. The writer attributes the appearance of this drug-eruption to vaso-motor disturbance (*Münchener Medicinische Wochenschrift*).

EXTRA-GENITAL SYPHILITIC INFECTIONS.—Dr. O. Petersen has collected all the available statistics showing the relative frequency of extra-genital chancre. In Mauriac's Handbook, 1,773 cases of syphilis in men are collated from various authors, in which were only 76 cases (4.3 per cent.) of indurated chancre; these were situated as follows: Lips, 36; anus, 12; abdomen, 9; tongue, 8; toes, 3; fingers, 2; eyelids, 2; gums, cheek, ala nasi, and buttocks, each 1. In Dr. Petersen's venereal service at the Alexander Hospital, during the seven years from 1878 to 1884, there were 1,208 cases of syphilis in men. Among these there were 23 cases (1.9 per cent.) of extra-genital chancre, distributed as follows: Lips, 11; anus, 9; abdomen, 2; cheek, 1. Professor A. S. Gray, of Kazam, puts the percentage of extra-genital chancres at 8.9, but he does not give the number of cases from which this percentage is reckoned. Bogolyuboff, in his report of the Kronstadt Marine Hospital, gives 4 cases of extra-genital chancre (lips, 2; eyelids and tonsil, each 1) in 753 cases of syphilis, or one-half per cent. Grödinger reports of 231 cases of syphilis in the Riga Hospital, 3 of extra-genital chancre (lips, 2; fingers, 1), or 1.3 per cent. In the case of women the figures are somewhat different. Mauriac has collected the statistics of 291 cases in which the seat of the chancre was given, and finds it on other parts than the genitals in 19 cases (6.5 per cent.), distributed as folfows: Lips, 9; anus, 5; nipples, 2; tonsils, buttocks, and gums, each 1. Kobylin reports 6 cases of hard chancre of the nipples in 77 cases of syphilis in women presented for treatment in the Kalinkin Hospital during the year 1880, and Sperk states that extra-genital infection occurs in 24.3 per cent. of the cases of syphilis in women, occurring in the same hospital. Plinatus met with 13 cases of syphilis contracted by women who nursed the infants in the Foundling Asylum of the Kreuzeserhöhung Sisterhood during the years 1870–73. Of indurated chancres of the tonsils, Dr. Petersen has collected the reports of 42 cases. In 30 cases the particular tonsil is mentioned, and of these the chancre was situated on the right tonsil in 18 cases, and on the left in 12. It occurred rather more frequently in men than in women, and usually in children from three to fourteen years of age, though one case was reported in a woman aged fifty-four years. To these statistics the author adds a case of his own, the only one seen by him during a venereal practice extending over more than ten years. The patient was a merchant thirty-five years of age, and the chancre was situated on the right tonsil. His wife, who was pregnant, had a chancre on the gums. She gave birth to a child who soon presented syphilitic symptoms, and a few months later the wet-nurse of the infant acquired a hard chancre of the left nipple. —*Journal of Cutaneous and Genito-Urinary Diseases*, January, 1889.

A NEW WAY OF DIAGNOSTICATING SHOULDER PRESENTATION.—Quiz Master—How do you diagnosticate a shoulder presentation? Student—By feeling for the hair in the axilla.

THE MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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VAGINAL LIGATURE OF THE UTERUS FOR DISPLACEMENTS.

THE routine treatment of uterine displacements by pessaries or tampons appears to be falling into disfavor with many enlightened practitioners and specialists. New methods of therapy, mostly of a surgical kind, are being prominently brought to the notice of the profession. We have the Alexander Adams operation and we have hysterorrhaphy, both decided innovations in the range of hitherto approved methods. The most recent operative measure intended to effect a cure in many cases of intractable malposition, including total prolapus uteri, is advanced by Dr. O. Schücking, of Pyrmont. This surgeon boldly proposes to pass a ligature through the substance of the uterus, and thus to restore the organ to its normal position. He gave a detailed history of a series of successful cases before the recent meeting of German Naturalists and Physicians. The Berlin correspondent of the *Medical Press* gives the following account of Schücking's method of procedure: "After thorough disinfection of the vagina and endometrium the patient is placed in the lithotomy position, the upper part of the body being placed low (hips raised). After emptying the bladder and the introduction of a Sims' speculum the anterior lip of the cervix is seized with a Museux forceps, and the fundus uteri is brought forward by means of a uterine sound. For the purpose of passing the needle he uses a specially constructed instrument. The needle is then passed to the fundus uteri, and the uterus is drawn strongly down by the right hand, that holds both the forceps and needleholder, in such a way that the os points to the left and the fundus to the right side. By gentle side-to-side movements he then tries to find the point of the uterus, on which the instrument within is pressing, an assistant at the same time drawing the bladder to the left. The needle is then passed through into the vagina. The operation is not difficult of performance in the case of women who have borne children, and in whom the pubic arch is rather flat, but where the uterus is enlarged, as it often is, and the parts are narrow or rigid, it may not be at all easy. The ligature is then seized with a curved hook, drawn a little forward, and cut off from the needle. The two ends are then tied. At the close an iodoform bougie is placed in the vagina and bladder. Ice is placed on the abdomen for twenty-four hours, and the thighs are flexed in order to reduce the tension on the suture. Until the suture is removed an iodoform bougie is placed in the vagina every second or third day. Some bladder troubles were remarked after the operation in nearly all the cases of retroflexion; but, on the other hand, bladder troubles present beforehand in cases of procidentia ceased after the operation. The sutures were removed in from six days to three weeks, once in six days, in eleven cases of retroflexion from the ninth to the fourteenth day." The discussion which followed the reading of Schücking's paper is published in the *Allgemeine Medicinische Central Zeitung*, October 31, 1888. Most of the speakers were inclined to be rather sceptical, especially in regard to the permanency of the good results reported to have been secured by vaginal ligature of the uterus. In the views of the sceptics we must for the present concur, and we would further advise all those who may desire to become imitators of the German gynecologist to practise his method on the cadaver before subjecting the living female to an experiment not devoid of danger.

THE NEXT PHARMACOPŒIA.

BEFORE long, the body of men representing our colleges of medicine and pharmacy, the profession at large, and the government medical services will begin to lay plans for the next revision of the Pharmacopœia. It is not an exaggeration to say that, in some respects, the next meeting will be more important than any which have preceded. A primary reason for this is that no previous ten years have been so rich in pharmaceutical discoveries as has the last decade. In spite of the crowded list of officinal remedies in the Pharmacopœia of 1880, many new aspirants for therapeutic honors have appeared, and have come to stay. Antipyrine, antifebrin, salol, cascara, sulfonol, and hosts of others cannot now well be dispensed with.

A second reason is that, of late years, an effort more systematic than ever before has been made to simplify therapeutics, and reduce them to rational principles. We hold that physiological and toxicological action is the basis on which any systematic therapeutics must be based. From this starting-point we can work intelligently. Even here, our conclusions, empirically drawn, are not always the ones suggested by the premises. The ever-varying factor of the human organism shows well, here, how medicine can never be in some respects an exact science. To further the progress in the direction indicated, is partially the province of the Pharmacopœia.

This book is much neglected by both the student and the practitioner. It is never suggested to the former as a needful acquisition. It becomes entirely disassociated from his study of materia medica. Naturally, it is rarely referred to in his post-student days. We doubt if the libraries of a hundred physicians taken at random would show more than a dozen copies, and probably some of these would be regarded by their owners as "standard" works, which have been defined as "books which everybody owns and nobody reads."

We think certain features of the Pharmacopœia might be much improved in the next edition. We must, however, remember that the book is for the whole country. Remedies quite popular in one section are rarely used in

another. This fact will limit our criticism somewhat. If the Pharmacopœia is made simpler and more attractive, the student will use it more. Useless drugs should be removed. Certain classes of preparations might be dispensed with. The "abstracts" have proven a useless addition. No one wants them now in these days, when the skill of the manufacturing chemist has been carried to such a nicety. The forty odd preparations of iron could be reduced to half that number. The same might be said of rhubarb, aloes, and many others.

We speak earnestly on this topic, because of our conviction that no branch of medicine is so unsatisfactorily taught as that portion of materia medica which treats purely of remedies. This unsuccessful teaching results, not from a lack of able men, but from the pursuance of wrong methods. The more extended a man's clinical experience, the narrower becomes, as a rule, his circle of remedies, and the greater his skill in the use of those retained. Now, if we could anticipate this by teaching students the effects and uses of say fifty of the leading remedies, we should amply equip him for a professional start, and give him much clearer conceptions of materia medica than he has at present.

THE NAVAL MEDICAL SERVICE.

THE Naval Medical Examining Board, now in session in Philadelphia, will hold its sessions at the Naval Hospital, Brooklyn, N. Y., beginning April 1, 1889. There are fourteen vacancies in the grade of assistant surgeon, and it is hoped that sufficient candidates will come up to fill all the places. Any young man in good health and without physical disabilities, who is capable of passing a good graduating examination before a medical college faculty ought to be successful before the Naval Board. The service gives a man at once a good income, and it has attractions which ought to make the task of filling the vacancies an easy one.

A NEW INFECTIOUS DISEASE.

DR. GUIDO BORDONI UFFREDUZZI has described (*Zeitsch. für Hygiene*, Bd. III.) a new infectious disease which affects man and some of the lower animals. It runs an acute fatal course, and resembles a form of septicæmia. Uffreduzzi thinks it identical perhaps with the disease known as "Hadernkrankheit." Two cases only have been observed. At the autopsies there was found in one case a hemorrhagic infiltration of the bronchial mucous membrane, and of the bronchial and mesenteric glands; in the other case there was a very intense hemorrhagic intestinal catarrh. Bacilli were found in the blood and organs. These were carefully cultivated in the bacteriological laboratory at Turin, and the differential characters established. The organism, to which the name *proteus hominis capsulatus* is given, was inoculated in lower animals, and its pathogenic powers established. The distinctive character of the new disease is thus based upon bacteriological grounds. Symptomatically it appears to resemble a severe type of septicæmia or malignant carbuncle. We can only trust that the *proteus hominis capsulatus* is "a scanty sort of water-beast" that does not wander beyond the limits of Turin.

News of the Week.

PITTSBURG DOCTORS MUST WAKE UP.—"There are no human beings on the face of the earth to-day that have less real knowledge of their own business than the doctors. Beyond a few well-known diseases which anyone can master, they are not a whit wiser than anybody else. That the doctors will have to wake up is quite plain to see. People read so much nowadays that some have even more information on the newest things in medicine than the doctors themselves."—*Pittsburg Leader*, December 9th.

DAMAGES FOR FRACTURE OF THE RADIUS.—An interesting, though not unusual, case has just been tried in Boston, in which a physician was sued for $10,000 for failure to treat correctly an injury involving a fracture of the radius near the wrist-joint. The jury, after being out for twenty hours, found a nominal verdict for the plaintiff in the sum of ten dollars without costs.—*Boston Medical and Surgical Journal.*

PROTECTION FOR AMERICAN PHYSICIANS.—In an editorial upon this point, it was stated that it was not just to American physicians that men who did not know enough to get a license to practise in Germany should be allowed to come over here, set up as qualified practitioners, and practise for twenty-five and fifty cents a visit, for Americans, even if they have a degree of M.D., cannot practise in Germany on the same conditions. This does not affect the humor of the following free-trade anecdote, but it shows how the mind distorts all social problems when it is in the grip of a special economic dogma. With this antidotal homily we append the following, from the *Philadelphia Record*: "More Protection Wanted. (The effect of an editorial in a contemporary.)—Workingman—'See here, I want protection.' Great Statesman—'Certainly, certainly; you shall have it. What's the matter?' 'Well, sir, some of these 'ere foreign doctors know so much that they keep folks alive too long. I want foreign doctors kept out o' this country. I'm a grave-digger.'"

NEW YORK COUNTY MEDICAL ASSOCIATION.—At the Annual Election, recently held, the following officers were elected: *President*, Charles S. Wood; *Vice-President*, George T. Harrison; *Recording Secretary*, P. Brynberg Porter; *Corresponding Secretary*, Augustus D. Ruggles; *Treasurer*, John H. Hinton; *Member of the Executive Committee*, S. B. Wylie McLeod. The annual reports showed a healthy financial condition, and an encouraging increase in membership.

THE JOURNAL OF THE RESPIRATORY ORGANS is the title of a new medical monthly, edited by Dr. J. Mount Bleyer, and published in this city.

PASTEUR WANTS MONEY.—It seems that M. Pasteur rather expects that nations which send patients to his institute for treatment should contribute to its support. England almost alone of European nations has failed to contribute any money. America has, so far as we know, contributed nothing. Neither have we any antirabic institutes (though Chicago is credited with one), so that persons bitten by mad dogs naturally go to Paris if they believe in

Pasteur's methods. There are now about twenty antirabic institutes scattered over the world.

Dr. H. D. Bruns has been made Pathologist to the New Orleans Charity Hospital, as successor to the late Dr. H. D. Schmidt.

Lay Prescribing of New Remedies.—The self-prescriber has already heard of sulphonal, and is taking it in the maximum dose in order to produce sleep. He is also recommending it to his friends who cannot sleep, in doses which are not free from danger. The popular use of antipyrin, which has been going on for over a year, has done no little injury; we have known thirty grains to be advised by one layman to another as an initial dose. We predict that the time must come, through the multiplication of these potent neurotic medicines, when physicians will insist upon the non-renewal of these potent prescriptions by pharmacists without a written order. It seems to us quite probable that we have simply arrived at the threshold of this department of chemical work, and that the profession will be compelled to throw additional safeguards around the unauthorized use of these powerful agents.—*Medical News.*

Awarding the Prizes of the Académie des Sciences.—The Paris correspondent of the *British Medical Journal* gives an account of the awarding of prizes by the Académie des Sciences. In Medicine and Surgery, Dr. Hardy received the Prix Monthyon for a new treatment of itch by baths and lubrications, which he has practised since 1852 at the Hôpital St. Louis (!). Dr. Hénocque received a Prix Monthyon for a new method of spectral analysis of the blood in hospital practice. A third Prix Monthyon was awarded to MM. Follin and Duplay for their treatise on Surgical Pathology. The Prix Bréant was given to Dr. Hauser for a work on the Spread and Prevention of Cholera. The Prix Barbier was divided between Dr. Ehrmann, of Mulhouse, who has published some interesting studies on Artificial Palates, and MM. Raphael Dubois and Leroy for a new ophthalmometer. Dr. Hache received the Prix Godard for his work on the Physiology and Pathology of the Bladder. The Prix L'Allemand was divided between M. François-Franck and M. Blocq. M. François-Franck has published a work on the Motor Functions of the Brain and Cerebral Epilepsy, being an account of his work for the last ten years. M. Blocq has made some interesting researches on Spasmodic Muscular Contraction. The Prix Monthyon in Physiology was divided between Dr. Augustus Waller, of St. Mary's Hospital, London, and M. Léon Frédericq, Professor at the University of Liège. The work which Dr. Waller presented to the Académie, was on "The Electro-motor Properties of the Human Heart." Dr. Waller's discovery is remarkable in being the only undoubted instance of an electrical change caused by a natural physiological action on man; it is a definite connection between the exact laws of physics and the less precise laws of physiology.

An Illustration of the True Value of Patent Medicines.—The effects of the "Scotch Oats Essence" Company, in New York, were sold out recently by the sheriff. Sixty-three gross of "Scotch Oats Essence" realized about four cents a bottle, the retail price being one dollar a bottle.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-third Annual Meeting, held in the City Hall, Albany, February 5, 6, and 7, 1889.

First Day, Tuesday, February 5th—Morning Session.

The President, Dr. Samuel B. Ward, called the meeting to order at 9.50.

The meeting was opened by prayer by Rev. Dr. James Ecob.

PRESIDENT'S INAUGURAL ADDRESS.

After thanking the Society for the honor conferred upon him in electing him President, he stated that the most important event to the profession in this country the past year had been the meeting of the Congress of American Physicians in September last.

Attention was called to a decision by Judge Learned, of the Supreme Court, who virtually decided that no man could be adjudged insane and sent to an asylum on the certificate of two physicians, in the way usually followed, unless he had shown that he was dangerous to himself or others. The physician who pronounced one insane who had not shown himself dangerous would, according to this decision, be liable to suit for damages.

Attention was called to the question of the propriety of dividing the meetings into two sections, medical and surgical.

On motion of Dr. Potter, of Buffalo, the suggestions contained in the inaugural address were referred to a committee of three.

The President appointed Dr. Potter Chairman of the committee; Dr. George Seymour, of Utica; and Dr. W. G. Tucker, of Albany.

The President appointed the following Committees:

Business Committee: Dr. D. B. St. John Roosa, Chairman; Dr. Ely, of Rochester; and Dr. Ford, of Utica.

Committee on Registration: Dr. William F. Brown, of Steuben; Dr. W. L. Pearson, of Schenectady; and Dr. C. M. Culver, of Albany.

The names of those applying for permanent membership was referred to the Nominating Committee.

The Committee on Prize Essay reported that no essay had been offered in competition.

Dr. B. F. Sherman offered the following:

Whereas, There is now a bill before the Legislature which requires those commencing suits for libel against publishers and editors to give bail for all costs; and

Whereas, Ninety per cent. of all suits brought for malpractice are for blackmail; therefore,

Resolved, That the Committee on Legislation be hereby instructed to use all honorable means to have this bill amended so as to include cases of malpractice.

The motion was carried.

REPRESENTATION FROM INCORPORATED SOCIETIES.

The President was empowered to appoint a committee of three to report on what shall be the basis of representation from incorporated medical societies in the State. He appointed Drs. Wey, Sherman, and H. P. Loomis.

REPORT OF COMMITTEE ON LEGISLATION.

Dr. Alexander Hadden, Chairman of the committee, read the report. The committee had exerted its efforts in favor of the legislation regarding the pauper insane which had been approved by the Society at the last annual meeting.

It approved of the principle of exempting from duty imported articles used in the healing of the sick, but had not petitioned Congress in the form suggested by the Georgia State Medical Society, as some want of agreement existed regarding the form.

The committee had also exerted its efforts in behalf of legislation restricting undertakers in the use of embalming fluids. An association of undertakers and others had prevented the desired legislation. Undertakers should be restricted from using any material in the embalming process which would complicate medico-legal investigation without special permit.

STATE BOARD OF MEDICAL EXAMINERS.

The committee proposed to urge the passage of the bill introduced into the Senate, January 28th, being essentially the compromise bill creating a State Board of Medical Examiners, which had first been brought up some years ago. Consideration of this report was postponed until 4 P.M.

DR. E. V. STODDARD read the report of the Special Committee on Revision of the Pharmacopœia. A congress for revising the Pharmacopœia will be held in 1890.

DR. CHARLES STORER, of Amsterdam, read a paper on

THE MUNICIPAL CONTROL OF DIPHTHERIA.

Even though the existence of a specific microbe had not been established, yet the sanitarian must treat diphtheria as a specific infectious and contagious disease. The plan of municipal control, carried out to some extent in Amsterdam, had been to send postals to physicians to return, announcing, every case at its commencement. The parents received instruction of the general nature of the affection, how to disinfect clothes, necessity for isolation, etc. The municipality should provide pure water, see that cellars were impervious to water, and thus prevent infection of ground air, etc. The school was the greatest centre of the contagion.

DR. J. LEONARD CORNING, of New York, read a paper entitled,

THE INFLUENCE OF THE MIND UPON THE BODY.

The author sought to give the truths and delusions of psycho-therapeutics, especially of mind-cure and faith-cure. By the ordinary operations of the mind sensation might be evoked, diminished, exalted, or perverted; only undivided attention to a particular part of the body was needed. Expectation or suggestion acted still more forcibly in the same way. Such effects were largely evanescent, and were functional or nervous in their nature. They were impotent to affect established histological changes. The mind-healer was the anarchist of science, and represented a Quixotic and often mischievous exaggeration of a single principle of legitimate medicine, and one which could be applied in only an exceedingly limited number of cases.

THE PREVENTION AND TREATMENT OF TYPHOID FEVER.

DR. STEPHEN S. BURT, of New York, opened his paper with a statement of statistics of large mortality from typhoid fever in New York and Providence during two months. The most common means of spreading enteric fever was drinking-water. Boiling would render infected water harmless. More attention should be given to drainage and general cleanliness compared with that given to decoration. He was in accord with those who believed pyrexia was a conservative process. The neurotic hypothesis of the pyrexia seemed to have been established. Was not too much attention given it relative to importance of other factors? Absolute recumbent position was recommended, fresh air without draughts, no medicine which disturbed the stomach, milk-diet, alcohol according to indications, opium in intestinal hemorrhage. Cold water was liable to produce shock; tepid water preferred.

DR. EUGENE BEACH continued the discussion with a paper on

DISEASES OF THE CIRCULATORY ORGANS COMPLICATING OR FOLLOWING TYPHOID FEVER,

in which he cited four instances of thrombosis, with more or less phlebitis, in his own practice, and a number of others in literature, although such complications were, rare. It might consist of embolism, phlebitis, carditis pulmonary infarctions.

DR. SIMON BARUCH, of New York, read a brief paper, discussing the

HYDROPATHIC TREATMENT OF TYPHOID FEVER.

The only advantage from antipyretic medication, seemed to be that it enabled the patient to die with a normal temperature. He considered the reduction of the temperature, which the cold-water treatment effected, to be of only secondary importance; the chief benefit was due to its influence upon the nervous system, invigorating the pulse, improving appetite and digestion, obviating complications, and carrying the patient over dangerous points. The cold-water treatment had reduced the mortality of typhoid fever from 21 per cent. to 1.7 per cent.

DR. BRUCE, of New York, had known some cases of sudden death from cold bath in typhoid; sponging with tepid water was less dangerous, and gave better results. He added a fair proportion of alcohol, and followed the sponging with smearing the body with sweet oil.

DR. GOFFE had had two cases of phlebitis in typhoid fever, in one of which he was giving sixty grains of quinine and also large quantities of whiskey. He suggested that the quinine might have been the cause of the phlebitis.

DR. B. F. SHERMAN had seen two cases of phlebitis in typhoid, in neither of which quinine could have been the cause.

DR. BELL, of Brooklyn, thought the benefit from water was largely due to reduction of temperature.

DR. THOMAS E. SATTERTHWAITE, of New York, then read a part of a paper entitled,

EMBOLIC PNEUMONIA, BASED UPON A RECORD OF EIGHTEEN FATAL CASES.

Embolic pneumonia might take place in the course of typhoid fever, from pressure of tumors, as cancer, on vessels, from cardiac thrombi, white, mixed, or red, and other conditions. It was chiefly when the embolus lodged in terminal vessels that it did serious harm. Pulmonary infarction was not easily produced in normal lung, and even in the crippled lung; if the respiratory movement were free it was not likely to occur from embolism. The pathological appearances of embolic pneumonia were described.

DR. L. E. HOLT, of New York, read a paper entitled,

PREVENTION OF SUMMER DIARRHŒA IN INFANTS, VIEWED IN THE LIGHT OF THE LESIONS.

The author was led, from post-mortem studies, to the belief that dyspeptic catarrh of infants often went on to production of follicular ulcers; these were frequently present, although the child increased in weight, and the mother overlooked the dyspeptic and diarrhœal symptoms; that such follicular ulcers usually precede what was termed summer diarrhœa. He had never found evidence of follicular ulcers having healed at the autopsy, and the inference was that most of the cases were fatal.

Careful attention should be given all cases of intestinal catarrh, and a cure be effected as soon as possible. Attention to food and digestion was very important. Some studies of the capacity of the stomach of infants led him to the opinion that hand-fed infants were very commonly over-fed.

DR. G. M. HAMMOND read a paper entitled,

THE TREATMENT OF CHRONIC CONSTIPATION BY ELECTRICITY.

Text-books made little mention of the treatment. He read the histories of a few of forty-one cases of chronic constipation treated by galvanic electricity. A better result was obtained by introducing the negative electrode into the rectum than when applied over the abdomen. The faradic current had been of service only in giving tone to abdominal muscles, for which it was used in one case. His

results had been most successful, particularly in cases where patients had movements previously only from large doses of cathartics.

Dr. O. F. Currier, and Dr. Burt, of New York, and Dr. H. R. Hopkins, of Buffalo, confirmed the statement of the author regarding the value of this treatment. The galvanic current also excited other hollow viscera to action, as the atonic bladder.

Dr. Holt had found galvanism successful in obstinate cases of nocturnal emissions, but Dr. Baruch said his experience had been unfavorable.

Afternoon Session.

REPORT OF COMMITTEE ON HYGIENE.

Dr. E. V. Stoddard read the report. The Committee had investigated the question this year of how to make local health boards more effectual, and had found certain facts to recommend a change in the so-called territorial unit of organization. Under the present law this is the village, town, or city; it was a question which they proposed to study, whether it might not better be the county. The health officer (who preferably should not be a physician) should have his office at the county seat.

The Committee suggested the passage of the following resolution:

Resolved, That the detention of the acute insane in county asylums, as shown by the Report of the State Board of Charities, is an evil which should not be tolerated in any case, whether pauper, indigent, or private patient; that it should be forthwith abated; that the recommendation of the said State Board of Charities for regulation and restriction of county care should be acted upon immediately.

Dr. A. Jacobi moved to amend, and include chronic as well as acute insane, placing both under State, instead of county, control. The amendment, after some debate, carried.

Dr. James B. Hunter, of New York, then read a paper (see p. 147) entitled,

THE TECHNIQUE OF VAGINAL HYSTERECTOMY.

Dr. T. A. Emmett, of New York, said the question of choosing vaginal hysterectomy in preference to high amputation would have to be determined by the relative prolongation of life. He thought the operation recently done by Dr. L. A. Stimson was destined to become the choice operation in such cases, viz., to secure the uterine vessels from above after laparotomy, and remove the uterus from below.

After remarks by Dr. Currier and Dr. Potter, Dr. Hunter closed the discussion, and said he thought the procedure adopted by Dr. Stimson was suitable rather to cases of uterine tumors, not to cancer.

PURULENT CONJUNCTIVITIS OF INFANTS, AND BLINDNESS IN THE STATE OF NEW YORK.

Dr. Lucian Howe, of Buffalo, read this paper, which included the report of the Committee on Blindness. He called attention to the fact, demonstrated on charts, that there was a very rapid increase of blindness in this country; that it was due to the purulent ophthalmia of infants; that by the use of methods already known (Credé's in particular) the percentage of blindness could be very materially lessened; that no systematic effort to do this was being made in this country either among physicians or others. Credé's method consisted simply in thoroughly cleansing the eyes of every newly-born infant, and dropping in a two per cent. solution of nitrate of silver.

The Committee on Legislation was instructed to recommend to the Legislature passage of a law requiring midwives and others to report all cases of ophthalmia as soon as they became informed of its existence.

The question of presenting a bill for the creation of a

STATE BOARD OF MEDICAL EXAMINERS

was then taken up, and after criticisms of the old bill presented to the Legislature in 1886, and again recently introduced at the suggestion of the Committee on Legislation, under the mistaken impression that the Society had so instructed it to do, a resolution to the following effect was passed:

Resolved, That this Society accept a suitable bill which gives it a majority representation on a State Board of Medical Examiners, and one which does not interfere with the laws of the State regulating the practice of medicine as codified the past winter.

Dr. Andrew F. Currier, of New York, then read a paper entitled,

THE DISORDERS OF MENSTRUATION,

which he divided into those of amenorrhœa, dysmenorrhœa, oligomenorrhœa, polymenorrhœa, and adipomenorrhœa. It was a peculiarity of the organs of the body, that when their functions were performed normally they were painless. This rule might find an exception in labor, but not in menstruation.

In the discussion, speaking of vicarious menstruation, he recommended electricity to re-establish circulation in the pelvic organs, when the hemorrhage from the nose, or elsewhere, would give way to menstruation.

Dr. Jacobi thought vicarious menstruation, and nosebleed in young people, was frequently due to insufficient development of the circulatory apparatus, particularly the heart, and tonics and cardiac stimulants were indicated.

Dr. Wey, of the special committee, reported in favor of admitting one delegate from voluntary incorporated medical societies.

The Committee on By-Laws was instructed to embody this suggestion in a by-law, to be acted upon.

THE MEDICAL VIEW OF INEBRIETY.

Dr. Crothers, delegate from the Connecticut State Medical Society, showed that inebriety had been regarded at certain places, at different times, as a disease, and at the present several societies, and journals, and many institutions were founded on this view; yet the general profession had given the subject little attention. Each physician should examine cases of inebriety for himself, and treat the patients as though afflicted with a disease. The various conditions preceding and following birth, tending to develop the inebriate (not necessarily alcoholic) habit, were reviewed.

Evening Session.

Dr. H. G. Piffard, of New York, made remarks on

OFFICE PHOTOGRAPHY WITH THE FLASH LIGHT,

and exhibited a number of stereopticon views of skin affections. The light was from magnesium ignited by an alcohol flame. The apparatus was easily portable.

CRANIAL MEASUREMENTS IN TWENTY CASES OF INFANTILE CEREBRAL HEMIPLEGIA,

was the title of a paper by Drs. E. D. Fisher and Frederick Peterson, of New York. Dr. Fisher, owing to limited time, gave a summary of the paper, stating that the measurements in the twenty cases had been made by Dr. Peterson, and consisted of twelve different measurements in each instance, such as could be made by any physician in his office. The measurements and volume in every case of the twenty were below normal, and on the side opposite the hemiplegia the skull was reduced to a considerable extent. The patients had become adults, but the lesion was congenital or infantile. Infantile hemiplegia would seem to be due often to delayed labor, but not, as some had claimed, to use of the forceps.

In treatment, Dr. Fisher suggested mental training with muscular exercise.

Dr. Ford cited a case in which good results had followed persistent treatment of the kind suggested by the authors, and Dr. A. Jacobi stated that changes in the form of the brain after infancy, or ossification of the sutures, would not manifest themselves in the skull, and Dr. Fisher coincided in this statement.

Dr. Jacobi further impressed the danger of hemorrhage in asphyxia of the newly-born not quickly resuscitated.

Dr. William Hailes, of Albany, then read a paper giving the history of an unusual case of intubation of the larynx for croup.

After adjournment, the members attended a reception by the President, at his residence.

The following is the Nominating Committee: First district, Dr. George H. Fox, of New York; Second district, Dr. Burke Pillsbury, of Middletown; Third district, Dr. Herman Bendell, of Albany; Fourth district, Dr. James Macfie, of Fort Covington; Fifth district. Dr. H. G. Du Bois, of Camden; Sixth district, Dr. Henry Flood, of Elmira; Seventh district, Dr. J. P. Creveling, of Auburn; Eighth district, Dr. L. A. Weigel, of Buffalo; delegate at large, Dr. W. W. Potter, of Buffalo.

Second Day, Wednesday, February 6th—Morning Session.

RESTRICTING ENDORSEMENT OF DIPLOMAS.

Dr. Dean, of Jefferson County, read a resolution adopted by his county society, suggesting legislation restricting the power of medical colleges, in this State, endorsing diplomas of outside colleges which did not confer upon the graduate the actual right to practise medicine and surgery in the county where the diploma was granted. The report was referred to the Committee on Legislation.

TREASURER'S REPORT.

Dr. Porter read the report, which showed a deficiency of $541.

NEW PERMANENT MEMBERS:

Wm. C. Bailey, L. Bolton Bangs, Barnard Barton, C. E. Bruce, S. S. Burke, C. W. Crispell, John H. Cipperly, Andrew F. Currier, Francis Delafield, A. C. Drury, M. B. Holwell, J. H. Glass, G. M. Hammond, John H. Haffron, E. M. Hermance, F. W. Hinkel, Burke Pillsbury, Clarence C. Rice, Charles Storer, William G. Trecher, John T. Wheeler, Paul H. Kretzschmar, Geo. R. Fowler, R. A. Witthaus, W. B. De Garmo.

The by-laws of the Medical Society of the County of Jefferson were approved, with suggestions of certain alterations.

Dr. Lucian Howe read the

REPORT OF THE COMMITTEE ON BLINDNESS,

which was in accord with the paper he had read the day previous. Blindness in the State was rapidly on the increase; arose chiefly from purulent conjunctivitis in infancy, a disease spread largely by immigrants, especially the lower Irish. The cost of support of the blind in New York, in 1880, was over one million dollars, and would be about two million in 1888. The committee suggested the necessity for popularizing, among the lay public, the necessity for thorough cleansing of the eyes immediately after birth.

In institutions a small quantity of two per cent. solution nitrate of silver should be used. There should be quarantine of suspicious cases in institutions, and posters should be put up where people congregated, in workshops, etc., cautioning against contagious diseases of the eyes.

The committee was continued.

A resolution offered by Dr. Sniter, instructing the Committee on Legislation to frame a bill for presentation to the Legislature, regulating the use of embalming processes by undertakers, was passed.

SALE OF VOLUMES OF "TRANSACTIONS."

The income from sale of "Transactions" was small, and the Committee on Publication was instructed to report a plan of increasing the sales at the next annual meeting, either by changing form of publication or otherwise.

MANAGEMENT OF CARDIAC DILATATION BASED ON ITS ETIOLOGY.

Dr. A. L. Loomis, of New York, read the paper. Cardiac murmurs were now regarded as of significance according to the pathological lesions and functional disturbances which they attended.

When the circulatory system became disturbed by disease within, or aside from, the heart, there was tendency to compensating hypertrophy. To maintain such hypertrophy of the heart certain conditions must be complied with: (1) the muscular tissue of the heart must be healthy; (2) the heart-muscle must receive sufficient supply of healthy arterial blood; (3) waste products must be rapidly removed from the body; (4) the nerves of the heart must be in normal state. Any changes of these conditions led to weakening of the heart-muscle and favored dilatation.

In studying the etiology of cardiac dilatation, cases divided themselves naturally into two classes, primary and secondary. The primary causes were (1) impaired nutrition with extreme anæmia, as in those subject to excessive physical labor; (2) degenerative changes in the heart-muscle; (3) excessive use of narcotics, as tobacco, alcohol, excessive venery. Secondary causes were insufficiency of aortic and mitral valves, obstruction to aortic circulation, atheromatous changes in nutritive artery of the heart; arterial sclerosis, and renal disease. It was always important, from a therapeutic standpoint, to determine whether dilatation was or was not secondary to hypertrophy, for the chances of temporary or permanent relief were greatly diminished if it were secondary to hypertrophy. Dilatation from impaired nutrition, most common in hard-working men, should be treated by rest, diet (mostly animal food), moderate physical exercise. He had obtained benefit from only one drug, arsenic in one-sixtieth grain doses after meals. In dilatation after typhoid fever, and other acute infectious diseases, the patient should not be allowed to rise from bed; give suitable food, wine; give combination of quinine and strychnine. Attention to functions of stomach and liver. Small doses of calomel, combined with rhubarb and soda, diet, and rest, often did more to relieve symptoms than tonics. Iron, arsenic, and strychnine were the most useful tonics in cases of dilatation from fatty degeneration.

The general management of dilatation due to fibroid degenerations of the heart-muscle was similar to that in fatty degeneration. Bichloride of mercury was administered in one-sixth grain doses for a long period; so-called cardiac tonics to be avoided; maintain action of the kidneys. Dilatation in those addicted to excesses with tobacco, venery, etc.; remove the exciting cause; use of strychnine and shower-bath; bromide of potassium in cases of excessive venery.

In secondary dilatation the condition was more serious. The heart-muscle should be kept as healthy as possible by diet and general habit; when compensation was incomplete digitalis was demanded. Digitalis was safely administered when pulse was of high tension and its use was followed by increased urinary secretion. Some of the indications for convallaria, strophanthus, etc., were pointed out.

Dr. A. Jacobi spoke of cardiac dilatation due to certain forms of insufficient development of the arteries. Spartein was very useful where speedy effect was desired, and digitalis produced cumulative effects.

Dr. Stoddard continued the discussion, laying stress upon the contra-indications in the use of digitalis.

PRACTICAL APPLICATION OF ACOUSTICS OF THE HUMAN CHEST IN PHYSICAL DIAGNOSIS (part 2)

Dr. James R. Leaming, of New York, stated that this

paper constituted the second part, the first part having been read before the New York Academy of Medicine, December 6, 1888. Primary sound vibrations may be conducted or consonated. Reflection of sound is the opposite of conduction, and, in a sound chamber prevents sound leakage. In the human chest the pleural lining reflects equally from all directions, but when adhesions were present, or tumors caused pressure upon it, leakage took place. Echoes are reflected sound-waves, either parallel or converging. Reflected sounds pertain altogether to sound-waves, and consonation has also to do with sound-waves alone, and nothing to do with primary or conducted vibrations. Consonation is constantly made use of by the auscultator. If the vital process be interfered with by paresis of the enveloping muscular fibres of the alveoli, which takes place in emphysema, the muscular sussurrus, the true respiratory murmur, will not be heard; when disability is temporary its gradual return can be noticed. In centric pneumonia there is no other physical sign than slightly raised pitch under percussion, but when the pneumonic process reaches the pleura physical signs immediately manifest the fact; at once are heard interpleural râles and bronchial breathing. Sound conduction, established by extension of disease to the pleura, revealed the lung consolidation. The sounds consonated in the air-sac were: First, from outside; second, air-friction sounds, caused by mucus, etc. The author then applied laws of acoustics to the heart in disease. The intervals of silence of heart-sounds must remain in exact synchronitic proportion so long as the heart remains in perfect mechanism as a pump. As soon as the heart-rhythm is altered its extent will measure the amount of injury the heart has received, and then murmurs of obstruction and regurgitation will define the locality and nature of the disease. The study of the individual heart-sounds was then taken up.

THE ETIOLOGY OF CROUPOUS PNEUMONIA.

DR. GEORGE M. STERNBERG, U. S. A., read the paper, which was a review of bacteriological investigations in this direction.

The evidence was pretty conclusively in favor of the microbe first discovered by the author in 1880, which he named after Pasteur, as being the cause of croupous pneumonia. Inoculations in rabbits, mice, etc., and examinations for the microbe in croupous pneumonia, furnished the evidence presented in favor of this view of the etiology of the disease.

DR. A. L. LOOMIS discussed the paper from the standpoint of the clinician, and said he knew no reason why, if microbes produced pneumonia, they should always be of but one species. It would seem reasonable that the disease occurring in connection with diphtheria and other affections might be the result of the influence of germs which produced the primary affection.

DR. THOMAS E. SATTERTHWAITE said the causation of other forms of pneumonia could readily be accounted for, but not so with acute lobar pneumonia. He thought the evidence was in favor of its being a microbic disease.

AFTERNOON SESSION.

REPORT OF COMMITTEE ON THE PRESIDENT'S INAUGURAL ADDRESS.

DR. POTTER read the report, which recommended referring that portion on the responsibility of medical commissioners in lunacy to the Committee on Legislation; that the question of the division of the Society into sections be left to the Business Committee from year to year; that the Publication Committee be instructed to incorporate into the Transactions each year a list of all former officers with their terms of service.

DR. FOWLER, of Brooklyn, reported

A UNIQUE CASE OF HERNIA OF THE PLEURA IN THE NECK.

It occurred in an illy-nourished infant, the hernial tumor developing after severe coughing during a bronchitis. There were two well-marked tumors of the neck, one on either side the trachea, reaching to the inferior maxilla, nearly disappearing on inspiration, tense on expiration. The child subsequently died of acute bronchitis, and at autopsy the tumors were found to have resulted from rupture of a primary bronchus at the upper part of the right lung, allowing air to escape beneath the pleura, which became stripped from its attachments.

THE PRESIDENT then read his address (see page 144), for which the Society extended a vote of thanks.

DR. H. R. HOPKINS, of Buffalo, then read a paper on

BASEDOW'S DISEASE,

and discussed particularly the symptoms connected with (1) the heart, (2) the thyroid gland, (3) the eyes. A point in prognosis related to inordinate action of the heart when this organ was undergoing fatty degeneration. Such cases were likely to prove speedily fatal.

The paper was discussed by Drs. Dana and Jacobi.

DR. C. L. DANA, of New York, read a paper entitled,

CHRONIC HEADACHE.

It was based on a study of two hundred cases of chronic headache, functional in character, excluding migraine. His conclusions were: 1. There should be more general recognition and differentiation of chronic head pains of functional origin. 2. Pains in the head are either neuralgias, migraines, or so-called headaches. 3. The seat of headaches is always in or referred to the trigeminal, vagus, or four upper cervical nerves. 4. Headaches are seated in or referred to the periphery of the nerves in question; neuralgia is seated in the trunks or central; migraine is a periodical discharging neurosis, affecting motor, vaso motor, secretory, as well as one or more cranial sensory nerves. 5. The dura mater is the most frequent seat of headache. 6. The great headache ages are from eight to twenty-five, and again from thirty-five to forty-five; childhood and old age are exempt. 7. The chronic functional, non-migrainous headaches may be classified as hæmic, including diathetic forms, toxic, dyspeptic, neurotic, reflex.

More exact knowledge of the nature of headaches may be gathered by studying the location and character of the pain in its relation to cause. Neurotic headache is best treated symptomatically by antipyrin, menthol, antifebrin, caffein, and bromides. Headaches due to reflexes are often treated better constitutionally than by means directed to local conditions. Rheumatic headaches were best treated by ammonia, chloral, and warmth.

DR. L. S. PILCHER, of Brooklyn, read the next paper entitled,

A CONTRIBUTION TO THE SURGERY OF CEREBRAL TUMORS,

in which he gave the history of a case of injury by fall to the skull of a man who, two years afterward, had epileptic attacks and mental impairment, which led him to use the trephine. A cerebral tumor was diagnosticated which could not be definitely located from the symptoms, but was believed to be in the angular gyrus or its immediate vicinity. It was not discovered after removing three pieces of bone, making an opening of considerable size. A portion of brain which projected forcibly through the opening could not be pressed back; it was sliced off, and the pieces of bone replaced. Paralysis of right arm and leg was noticeable after the operation, and the patient died within thirty-eight hours from respiratory failure. One of the pieces of bone had already become adherent to the dura. A gliomatous mass occupied the anterior half of the left hemisphere, extending into the corpus callosum. It could not have been removed had its location been known before the operation.

THE USE OF GALVANISM IN GYNECOLOGY,

was the title of a paper by DR. FORD, of Utica, and was supplementary to some he had read previously on this subject. He called attention to the fact that the galvanic

current of great voltage was safer in cases of fibroids, and seemed most efficacious, while the greatest electrolytic action was obtained from small voltage with high amperage. During 1888 he had employed galvanism in about sixty-four cases, including fibroids, exudates, hydrosalpinx, etc. In pelvic exudates it seemed of much value.

Dr. Daniel Lewis read the

REPORT OF THE COMMITTEE ON QUARANTINE CONTROL.

The question for the consideration of the committee had been whether it was best to take control of quarantine at New York Harbor from the State of New York and invest it in the Marine Hospital service. The extensive improvements now in progress at the quarantine stations met all the more important criticisms of the Philadelphia committee which visited the islands when cholera was there. With proper agitation, particularly by the physicians of the State, demands for sanitary reforms would be met by the Legislature, and the committee, believing in "home rule," did not approve of investing quarantine control in the Marine service.

Dr. J. H. Glass, of Utica, read a paper upon,

INFERIOR DENTAL NEURECTOMY,

describing a new operation—the removing of a portion of the inferior dental nerve from within, instead of externally to the mouth. The objections to the external method were well known. In the one case he removed five-sixteenths of an inch of the nerve. The patient had not yet had a return of the neuralgia. He had further demonstrated the practicability of the procedure on the cadaver.

The annual dinner was served at the Delavan, at 7 P.M.

PAPERS BY TITLE.

The following papers were read by title: "On the Use of Sulpholeate of Sodium in the Treatment of Skin Diseases," by Dr. Geo. H. Fox; "The Medical Treatment of Diseases of the Urinary Organs in Children," by Dr. A. Jacobi; "Amblyopia in Diabetes, with Report of Six Cases," by Dr. W. O. Moore; "On the Use of Tobacco," by Dr. F. H. Bosworth; "The Use of Prismatic Spectacles for the Relief of Asthenopia caused by Insufficiency of the Ocular Muscles—Cases," by Dr. David Webster; "Biographical Sketch of Dr. Hyde, and also one of Dr. Jewett," by Dr. W. C. Wey; "Double Inguinal Hernia in a Pseudo-Hermaphrodite—Operation," by Dr. C. N. Dixon Jones.

Third Day, Thursday, February 7th—Morning Session.

OFFICERS-ELECT FOR ENSUING YEAR.

After the transaction of some preliminary business, the Committe on Nomination reported as follows: For *President*, Daniel Lewis, of New York; *Vice-President*, Alfred Mercer, of Syracuse; *Secretary*, F. C. Curtis, of Albany; *Treasurer*, C. H. Porter, of Albany.

Censors, Southern District: L. Emmet Holt, of New York; S. Sherwell, of Brooklyn; E. M. Hermance, of Yonkers. Eastern District: Joseph Lewis, of Albany; Thompson Burton, of Fultonville; Leroy McLean, of Troy. Middle District: Robert Frazier, of Camden; C. L. Stiles, of Owego; J. H. Glass, of Utica. Western District: H. L. Elsner, of Syracuse; Frank H. Patten, of Buffalo; B. R. Fordyce, of Union Springs. College of Medicine of Syracuse University, J. N. Goff, of Cazenovia.

Committee of Arrangements: Samuel B. Ward, of Albany; Edward L. Partridge, of New York, and C. S. Merrill, of Albany. *Committee on By-laws:* F. A. Castle, of New York; H. R. Simmons, of Utica, and F. C. Curtis, of Albany. *Committee on Hygiene:* E. V. Stoddard, of Rochester; A. N. Bell, of Brooklyn; Wm. B. Brown, of Bath; J. P. Creveling, of Auburn; Wm. H. Bailey, of Albany; Wm. C. Bailey, of Albion; E. F. Brush, of Mt. Vernon. *Committee on Legislation:* D. B. St. John Roosa, of New York; Burke Pillsbury, of Middletown; Maurice J. Levi, of Albany. *Committee on Ethics:* A. Jacobi, of New York; Arthur Mathewson, of Brooklyn; H. R. Hopkins, of Buffalo. *Committee on Prize Essays:* Geo. F. Shrady and F. P. Foster, of New York; Eugene Beach, of Gloversville. *Committee on Publication:* F. C. Curtis, of Albany; John O. Roe, of Rochester; O. B. Douglas, of New York, and C. H. Porter, of Albany.

Honorary Members: Howard Marsh, of London; Francis Bacon, of New Haven; Reginald Harrison, of Liverpool; Morell Mackenzie, of London; William Pepper, of Philadelphia; Max Schede, of Hamburg.

Eligible Honorary Members: William H. Taylor, of Cincinnati; Joseph Price, of Philadelphia; George J. Engelman, of St. Louis; R. J. Levis, of Philadelphia; Lennox Browne, of London; James Nevins Hyde, of Chicago; E. E. Montgomery, of Philadelphia.

Delegates to other Societies: To British Medical Association, Robert Abbe, of New York; E. L. Partridge, of New York; L. D. Bulkley, of New York; William Hailes, of Albany. To Canadian Medical Association, Floyd S. Crego, James MacFie, and G. H. Oliver. To Ontario Medical Association, John Gerin, J. F. Whitbeck, James P. Boyd, W. W. Potter, H. G. Dubois, L. D. Weigel, G. M. Hammond, W. B. DeGarmo. To Connecticut State Medical Society, D. B. St. John Roosa, J. P. Creveling, Andrew F. Currier. To Massachusetts Medical Society, A. M. Phelps, O. B. Douglas, John O. Roe, L. G. Weigel. To New Jersey Medical Society, Walter B. Chase, Thomas E. Satterthwaite. To Pennsylvania Medical Society, C. L. Dana, H. D. Chapin. To Virginia Medical Society, C. C. Rice, George H. Fox, A. M. Phelps.

RESIGNATION OF SECRETARY DR. W. MANLIUS SMITH.

The Nominating Committee had received the declination of Dr. William Manlius Smith, to serve the Society longer as secretary. The Committee expressed its deep regrets, and paid a high compliment to Dr. Smith for his valuable services to the Society during the twelve years he had been Secretary. All the gentlemen named for office were elected without opposition, excepting Dr. Goff, nominated for Censor of Syracuse University. Speaking for the faculty of that college, Dr. W. M. Smith, nominated Dr. G. V. Stoddard. Dr. Goff received eight votes, Dr. Stoddard, seven. Dr. Flood read a resolution to change the by-laws, to be acted on next year, requiring but a two-thirds vote of the Nominating Committee, instead of a full vote, to make the nomination for President, Vice-President, Secretary, and Treasurer. Majority vote for other officers.

A committee of three, consisting of Drs. Flood, Curtis, and Brown, was appointed to consider the revision of the constitution of the Society.

Dr. L. D. Bulkley read a paper on "Clinical Study of Alopecia Areata." After a vote of thanks to the President for the able and courteous manner with which he had presided over their deliberations, the Society adjourned.

The Alkaloids of Cod-liver Oil.—Gautier and Mourgues have found in cod-liver oil six toxic leucomaines; butylamine, hexylamine, amylamine hydro-dimethyl pyridine, aselline, and morrhuine.

Aselline is not abundant, and only acts in large doses, producing stupor, fatigue, and dyspnœa. Three milligrammes of the chloro-hydrate killed a green finch in fifteen minutes.

Morrhuine is quite abundant, as a teaspoonful of dark oil contained two milligrammes. Given to guinea-pigs and to birds, as a chloro-hydrate, it proved stimulant, diaphoretic, and especially diuretic, a guinea-pig weighing 250 grammes having lost 13.5 grammes in two hours, after taking 29 milligrammes of the alkoloid hypodermically.—*Medical Times.*

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, January 28, 1889.

ALEXANDER S. HUNTER, M.D., PRESIDENT, IN THE CHAIR.

DR. HENRY D. CHAPIN read a paper entitled,

SEPTIC POISONING IN EARLY LIFE.

The extreme susceptibility to septic infection manifested in early life had long been recognized by those called upon to treat the diseases of children. A division of the cases was made into septic poisoning which occurred in the newly born, and that seen in older infants and young children. Infection might even take place before birth by the passage of septic matter from the mother to the fœtus through the medium of the placenta. In such cases the infant might be born dead, or die soon after birth.

After birth the chief vulnerable point for the entrance of septic poison was the umbilicus. Dr. J. Lewis Smith, the author said, had divided these cases into two classes: Those in which the poison entered the system through an umbilical sore and was conveyed by the lymphatics, and those in which it entered by the umbilical vein. When the accident took place there was more or less oozing of fluid from the point of entrance, soon followed by evidence of pleurisy, peritonitis, and other results of such infection. An illustrative case was cited in which the infant was born healthy, but the mother contracted septicæmia, and five days after birth the infant showed erysipelas upon the body, followed soon by death. The autopsy showed peritonitis; pus in the liver, none in the umbilical vein, greatest amount of inflammatory process at the navel. A simple abrasion elsewhere on the body might be the seat of entrance for the poison. The abrasion might be caused by the forceps. In one of his cases the infant on the sixth day showed erysipelas, commencing at the vulva. General septic poisoning followed, with inflammation of the serous membranes and death. In fact, the genitals became, after birth, the most vulnerable point for the entrance of the septic poison. As the infant grew older the upper part of the body, particularly the scalp and mouth, not infrequently became the seat of invasion. The cells, by their inherent vitality, could dispose of and destroy a certain number of the invading germs, but if the germs were produced in too great number the poison found its way into the general system, producing septicæmia. Not infrequently the infection took place from ulcers of the scalp caused by the presence of pediculi and scratching. The author cited a case in which swelling and ulceration of the glands of the neck and some septic symptoms in a girl, aged seven, apparently owed their development, in the first place, to head-lice. Cleanliness effected a cure.

The mouth would seem to be a particularly favorable place for bacterial development. Aphthous patches, when they formed small ulcers, were favorable for the entrance of septic matter. The pain and distress, together with constitutional symptoms, attending many cases of stomatitis could hardly be explained by simple inflammation of the mucous membrane, but neighboring tissues being infiltrated by septic matter would satisfactorily account for the disturbance. Many cases of septic disturbance in the mouth had their origin in carious teeth.

Other sources of septic poisoning were in nasal catarrh, otitis media purulenta, etc. He believed many cases of so-called scrofulous diathesis were cases of constitutional poisoning, the poison entering at some lesion which had been overlooked. Infection of the general system might not take place at once, but after a time the local lymphatics became unable to dispose of the germs and general infection resulted. The intestinal tract might be the entrance for the poison, and he believed a common entrance was in the air-passages, which were constantly exposed to septic influences in the foul air of close tenement-quarters. The symptoms here were different from those seen in malaria from marsh miasm, although the diagnosis of malaria was common.

The treatment was preventive, local, and constitutional. Cleanliness was of special importance. The cord in the newly born should receive the dry dressing, to hasten mummification. One should search for lesions and heal them by approved methods of treatment.

DR. J. LEWIS SMITH approved of the division of the cases into those in which the sepsis occurred in the newly born and those of older children. In the former, the cases most likely to prove fatal were those in which the sepsis took place through the umbilicus, which might be by way of the lymphatics at the umbilical fossa, or by way of the vein. He recited some of his observations in an outbreak of eight cases in the Infant Asylum a year ago, and already published. Aphtha of the mouth so readily healed that he doubted whether this could be considered one of the sources of sepsis. He dwelt on the lesions of scarlet fever and diphtheria as sources of entrance for septic matter, and expressed the belief that such septic complication of the cases was often the cause of a fatal termination. It was coming to be a common practice in diphtheria to administer small doses of bichloride of mercury, and Dr. Smith recommended its use in a spray, a certain number of compressions of the bulb to spray a teaspoonful of the liquid which contained the required dose of the bichloride. Thus the local antiseptic effect of the drug was first obtained in the throat, and afterward the child swallowed it. He also called attention to the great benefit to be derived from vapor in the room, from a solution of carbolic acid, turpentine, oil of eucalyptus, and water. The oil of eucalyptus covered the objectionable odor of the other two ingredients.

DR. A. H. SMITH pointed out the advantages of stripping the cord of all gelatinous material before dressing. It hastened mummification.

DR. A. F. CURRIER said the diseases of the eyes to which newly born infants were subject had been much less frequent in institutions in which a solution of nitrate of silver had been regularly employed as a prophylaxis.

DR. CHAPIN remarked, in closing the discussion, that it was not within the scope of the paper to speak of sepsis from the poisons of scarlet fever, diphtheria, and gonorrhœa.

DR. SIMON BARUCH then read a paper entitled,

THE VALUE OF WATER IN THERAPEUTICS.

The author contrasted the present position of water as a therapeutic agent with that formerly occupied by it, compared methods now in vogue with those of the past, and drew lessons verified by clinical experience. Most text-books devoted little space to water as a therapeutic agent.

His first experience with the use of water externally took place when he was army surgeon in the civil conflict. It was customary at that time to use water freely on wounds, and the results compared very unfavorably with those from the modern dry method; suppuration and mortification were common. Experience had demonstrated the value of boiled water in laparotomy, and also the fact that drugs added to render the water antiseptic would be less called for if the water were clean and boiled before using.

The application of water as a styptic was of modern origin. In post-partum hemorrhage, for instance, intra-uterine irrigation by hot water was much superior to persulphate of iron, which formerly was much used. Strict cleanliness and hot water at the time of the operation would be the antiseptic of surgery in the future. We were now in a position to appreciate the value of hot vaginal douches introduced by Dr. Emmet in place of zinc solutions, etc., in certain inflammatory processes. While speaking of the value of water employed externally the author mentioned certain skin-diseases, but pointed out eczema particularly as contraindicating its use. It

was also contraindicated in suppurating otitis media, a disease in which much better results had been obtained by substituting the dry boracic-acid dressing. Time had also shown that in normal labor vaginal injections, once commonly practised by some, were contraindicated. The author cited some cases in practice in proof of his deductions.

Passing to the internal use of water for other than diuretic and diaphoretic effects, he first took up its employment in dyspepsia, both recent and chronic, citing cases in which marked benefit had been derived. In recent cases washing the stomach would often bring about a cure in a very short period, while in chronic ones longer time was required, and the remedy had to be supplemented by stricter diet, and perhaps by drugs. The sipping of hot water some time before breakfast was also of benefit in some cases. Washing the stomach had been employed with success in gastric and gastro-intestinal disturbances of infants, and free irrigation of the stomach for ileus was a remedy which should be resorted to before laparotomy. Dr. Baruch could testify to the good effects of irrigation of the intestine in catarrhal jaundice, but this treatment had proved a failure in his hands in jaundice from gall-stones, although others had reported success. In summer diarrhœa it lessened the number and changed the character of the movements, and arrested purging.

Cold water acted on the human body chiefly by mechanical and thermal influence. By its use changes could be wrought in the innervation of different parts, and in the circulatory system to the extent of producing only slight contraction of the blood-vessels or of causing absolute death by shutting off all circulation. The agent was beneficial when applied to the surface in proportion to the reactionary powers of the patient. The application of such briefly stated principles might be left to each practitioner, but Dr. Baruch mentioned chronic diseases involving faulty nutrition as those in which the external application of cold water afforded much satisfaction, especially in robust patients who reacted well under drying and friction after the cold bath; and in gastric and cardiac neurasthenia it went far toward restoring the health. The wet sheet involved the presence of a competent assistant, but sometimes promoted reaction better than the bath. In some chronic diseases the applications should be local. As the internal use of hot water had enabled him to dispense largely with such palliative remedies as pepsin, so had the external application of cold water enabled him to dispense largely with so-called tonic medicines. Cold water to reduce the temperature, and to stimulate the nerve-powers to reaction from shock produced by cold upon a large surface, had obtained a wide application, as in hyperpyrexia from sunstroke, rheumatic fever, typhoid fever, etc. The author dwelt upon the greatly lessened mortality in typhoid fever in cases where the temperature was kept down by cold or tepid water, as shown by Brandt's statistics and others. The percentage of deaths in typhoid fever in this country was little better than that recorded in Germany and elsewhere when the application of water to the surface was not practised; it was about twenty-one to twenty-six per cent., whereas under the use of cold or tepid water it had fallen to seven or below. Dr. Baruch had become convinced that the ordinary treatment of typhoid fever should give way to the hydropathic method.

Dr. J. Harvie Dew continued the discussion of this subject in a short paper, impressing its importance more especially from a physiological stand-point. The following facts should first be noted: 1. The chief component part of the human body in health was water; its relative proportion to all the solid constituents had been estimated to be two-thirds or three-fourths the entire weight of the person. 2. Water constituted almost the total volume of each one of the circulating fluids, including that of those of digestion. 3. It was the essential medium by which digestion was accomplished, absorption made possible, and the transportation of the elements of nutrition to the various tissues of the body was made easy. 4. As water entered so largely into the composition of the tissues it became of corresponding importance to every process in assimilation. 5. Water was the medium by which all waste matters were held in solution and conducted to their several points of exit. 6. Observations and experiments had shown that from three to four pints of liquid food were required to maintain normal functions and weight in an individual weighing one hundred and forty to one hundred and fifty pounds. 7. It was a clinical fact that persons thin in flesh were by habit, or for other reason, accustomed to take very small quantities of liquid food, while well-preserved and fleshy persons were copious drinkers of fluid in one form or another. 8. It was also a clinical fact that in every morbid or diseased condition of the system, whether organic or functional, the functions of digestion, absorption, assimilation, secretion, and excretion, embracing elimination, became in some way disturbed—sometimes one or more of these functions, at others all of them, to a greater or less degree in the same patient.

It thus became evident that water in its various applications was of extreme importance in the treatment of disease and the restoration of the normal functions of the body. Many physicians objected to the use of water at meals, seeming to forget that it was rapidly absorbed and took the place in the circulatory fluids of the large quantity of water which these gave up during the digestion and absorption of the food in process of consumption. Water or liquid food was seldom taken in excess, but many persons took too little and suffered from deficiency in weight, dyspepsia, constipation, tenacious secretions, dryness and other disturbances of the skin, defective elimination, and all the symptoms brought about in consequence of such disturbances of normal function. The physician should always make careful inquiry as to how much his patients were taking of liquids in one form or another, and he would often be surprised to find that persons who should be eliminating from three to five pints were consuming but one to two pints.

Dr. Andrew H. Smith moved that, owing to the importance and scope of the subject treated of by the last two papers, its discussion be made the special order of the next meeting. Carried.

Dr. G. H. Fox was elected censor to fill a vacancy, and Dr. E. S. Peck was appointed to fill a vacancy in the Committee on Ethics.

NEW YORK NEUROLOGICAL ASSOCIATION.

Meeting held January 8, 1889.

George W. Jacoby, M.D., President, in the Chair.

Dr. Graeme M. Hammond exhibited a male patient with

TRAUMATIC HYSTERIA.

He had been injured July 11, 1885, by falling upon a sharp-pointed iron rod one inch in diameter, which penetrated into the right submaxillary region about one and one-third inch from the median line. It passed in about four inches in a direction upward, backward, and inward. Dr. Philip Zenner, of Cincinnati, saw the patient half an hour subsequent to the accident, and has described his symptoms in The Medical Record. He was then suffering from paralysis of the right arm and leg, right side of the face, tongue, and palate. There was complete anæsthesia of the left side of the face, and loss of taste on left side of tongue, and of smell in the left nostril. There was intense pain in the region supplied by the middle division of the fifth nerve. He consulted Dr. Hammond for the relief of this pain, and his advice was, to excise the middle division of the nerve. The patient was sent by him to St. Luke's Hospital, where Dr. Robert Abbe operated November 16th. The nerve was excised almost to Meckel's ganglion. The next

day the patient was again examined. The intense facial pain had disappeared, and the anæsthesia of the two other divisions of the fifth had also disappeared. The senses of smell and taste were restored, and the hemiplegia was markedly improved. At the present time, seven weeks after the operation, there has been no relapse. Dr. Hammond's conclusion was: that although a certain amount of organic lesion was undoubtedly present, yet the fact that so many symptoms were relieved by an operation which would not have affected them at all if they had been produced by a central lesion, showed conclusively that hysteria must be regarded as the sole cause of their production.

DR. C. L. DANA asked if the whole of the side of the tongue was affected, and was anwered in the affirmative. He stated that he had seen the patient previously, and that the gain in motor power since the operation was little; that there was still considerable loss of power and rigidity. There was no doubt that he had a genuine trauma at the base of the brain, and that he now has an organic lesion upon which some hysteria is superimposed.

DR. FREDERICK PETERSON did not think that a true ankle clonus, such as was obtained in this case, could be obtained in simple and pure hysteria. He had not met with true clonus in hysteria, but had frequently observed what Gowers describes as a spurious clonus, due to a half-voluntary contraction of calf-muscles, and which Gowers considers characteristic of hysteria.

DR. B. SACHS believed that an actual clonus is observed in pure functional neuroses at times, and stated that such cases are cited by Oppenheim. He thought the marked hysterical element in this case and the rapid improvement made it possibly one of hysteria. He asked if there were any hysterical symptoms in the previous history of the case, and was answered in the negative.

DR. HAMMOND closed the discussion by saying he thought there was a real organic lesion also in the case, but that the anæsthesia, part of the hemiplegia, and the loss of taste and smell were hysterical.

DR. ISAAC OTT, of Easton, Pa., then read a paper upon the

THERMO-POLYPNŒIC CENTRE AND THERMOTAXIS,

the following being his conclusions from sixty experiments:

1. The thermo-polypnœic centre is situated in the gray matter about the third ventricle at its anterior part.

2. This centre acts reflexly, so that when heat is thrown on the body the sensory impulses excited by the heat are conveyed to the polypnœic centre, which stirs up the respiratory centre to throw off heat. It stands between heat-production on one side and heat-dissipation on the other.

3. The fall of the number of respirations by the heat after the removal of the polypnœic centre is due to an excitation of fibres running in the vagi which inhibit the respiratory centre.

4. The normal temperature of the body is not necessarily dependent upon the amount of heat produced or dissipated, for human calorimetry shows that the heat-production varies, but the temperature remains nearly the same. The relation of heat-production to heat-dissipation decides the temperature.

5. The cortical centres, the cruciate and Sylvian, are thermotaxic.

6. The four basal thermotaxic centres are situated as follows: one in the caudate nucleus, one in the gray matter beneath the caudate nucleus, another in the gray matter about the most anterior part of the third ventricle, and still another in the anterior inner end of the optic thalamus in the gray matter about the third ventricle.

7. These six thermotaxic centres are more circumscribed than Dr. Gerard, of Genoa, believes.

8. These six thermotaxic centres are neither thermo-inhibitory nor thermo-excitor, but thermotaxic; that is, they maintain the balance between heat-production and heat-dissipation, so that the temperature is kept normal.

9. In fever neither increased production nor increased dissipation nor high temperature are necessary, but fever is mainly a disease of thermotaxis, a disorder of the four basal thermotaxic centres. It is true in septic fever that in its initial stage heat-production usually runs temporarily ahead of heat-dissipation, but exceptionally both are immediately diminished.

10. Antipyretics do not necessarily inhibit or excite heat-production or heat-dissipation, but act upon the thermotaxic centres disordered by fever agents to restore order or normal thermotaxis. Professor Chittenden's careful researches prove that in healthy hungry rabbits moderate doses of quinine exercise at most only a very slight depressing influence on body temperature, and have but a minimum effect upon the production of carbonic acid.

11. D'Arsonval's calorimeter for animals and man, as modified by the writer, is less liable to error than any other, as the agitator can be worked without opening the instrument or hardly disturbing the sawdust covering.

12. Human calorimetry shows that an adult, after a full meal, produces between three hundred to four hundred heat units per hour, and not one hundred and ten calorics, as Helmholtz theoretically obtained.

DR. DANA did not question the truth of the author's statements, but what interpretation should we make of the six thermotaxic centres he had described? Can the bodily temperature be regulated without them at all? He referred to a case of his that he had recently published, where, although there was no cerebrum, basal ganglia, or cerebellum, and only part of the pons, yet the temperature was normal. The facts of human pathology should be brought into harmony with these physiological experiments.

DR. OTT said it was difficult to understand the regulation of temperature in Dr. Dana's monster. Injuries to the corpus striatum disturb the temperature, but the other thermotaxic centres serve to regulate it.

A paper was then read by DR. H. W. BERG on

ECLAMPSIA INFANTUM IN ITS RELATION TO FEVER,

in which he took the ground that febrile eclampsia calls into activity two sets of nerve-centres, the thermogenic and the convulsive. An alteration or lesion is produced in the thermogenic centre by excessive hyperæmia, anæmia, or some minute structural change, causing a rise of temperature; secondarily, it affects the unstable convulsive centre in the medulla, especially in infants whose medullæ are in an exalted state of irritation. He thought it probable that the motor and thermic nerves are intermingled in the medulla, and thus an irritation of one results in irritation of the other. Thus fever produces convulsions in children, while the process may at times be reversed, as in the status epilepticus, where, after a period of convulsion, the temperature begins to rise, and, as Bourneville has pointed out, may reach an enormous height. He would treat febrile eclampsia, not with antispasmodics, but with antipyretic remedies; in other words, treat the cause of the convulsions. In this he has had gratifying success in the use of antipyrine and antifebrine, together with cold or tepid sponging with equal parts of water and alcohol.

DR. OTT said that children no doubt have feeble thermogenic centres.

DR. WILLIAM LESZYNSKY referred to a report of his, some years ago, of twenty or more cases of status epilepticus, in which the rise in temperature did not accord with the statements of Bourneville. As to treatment, he thought simple sponging with alcohol and water sufficient, and that the use of the wet pack or of antipyretics was objectionable.

DR. WEBER would ask Dr. Ott if antipyrine and phenacetine act by assisting the system in the dissipation of heat.

DR. OTT stated that antipyrine probably decreases heat-production and increases heat-dissipation. The same would be true of phenacetine.

DR. WEBER thought that dependence must not be

placed upon antipyretics in severe cases of infantile eclampsia. Chloroform should be administered by inhalation, or chloral injected per rectum. He had seen cold water injected with success.

DR. SACHS did not believe the relation of eclampsia and fever exactly that of effect and cause. Were convulsions due to high fever it would be curious that in a fever preceded at its outset by convulsions, although the temperature continues high or increases, yet there were no subsequent convulsions. The fever in epilepsy was not due to excessive muscular exercise. A case of his with hystero-epilepsy had recently had as many as two hundred convulsions in twenty-four hours, but without any elevation of temperature.

DR. HARWOOD had treated eclampsia with chloroform and with the wet pack, and could heartily endorse the conclusions of Dr. Berg as to hydrotherapeusis.

DR. BERG, in closing the discussion, said he thought the instance cited by Dr. Sachs, of a fever ushered in by convulsion, yet without further eclamptic seizures, in spite of the continuance of the fever, did not carry as much weight with it as would at first appear. Hughlings Jackson had pointed out that the convulsive centres could become so exhausted that the fits would not be repeated. He prefers the wet pack even to sponging, because refrigeration by the former method is more rapid and less dangerous. He had seen pneumonia produced by sponging. The pack is less harmful.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE DISCUSSION ON CHOREA AT THE MEDICAL AND CHIRURGICAL SOCIETY—PAPERS BY DRS. HERRINGHAM AND GARROD—SPEECHES BY DRS. CHEADLE, SANSOM, STURGES, BARNES, STEPHEN MACKENZIE, AND ROBERT J. LEE—CHANGES AT THE UNIVERSITY OF LONDON—LEGAL DIFFICULTIES AS TO THE COLLEGE BUILDINGS ON THE EMBANKMENT—THE WEATHER OF 1888 AND THE REDUCED DEATH-RATE.

LONDON, January 14, 1889.

CHOREA formed the subject of discussion at the last meeting of the Medical and Chirurgical Society. Dr. Herringham read a paper based upon a study of the antecedents, family history, state of the heart, and subsequent history of eighty cases. In nineteen cases the attack had been preceded by acute rheumatism, and the total number of cases in which rheumatism could be traced was thirty-seven. Injury, shock, or violent emotion preceded the attack in six cases, the interval being never greater than two days. In twenty cases there was a history of hard mental work or worry. These influences were not mutually exclusive, since all those classed under injury, shock, or emotion could alone be considered as exciting, the others only as predisposing cases. In twenty-five cases none of these influences could be traced, and of this number fourteen were first attacks. Nearly all the patients were delicate, headaches and indigestion being common complaints. An inquiry into the family history (confined to parents, brothers, and sisters) showed that rheumatic fever had occurred in twenty-five out of seventy-five families; seventeen of these belonged to thirty-four patients of the rheumatic classes and the remaining eight to forty-one patients with no history of rheumatism. Chorea had occurred in twelve families, and nine of these were also rheumatic. With regard to the state of the heart, in ten cases it was normal, in twenty-five there was a doubt as to endocarditis, while in twenty cases the heart was certainly diseased. Thirty-seven cases were seen again, usually at an interval of two years or more, and for the most part presented the same state as before. Of eleven cases which developed signs of heart-disease during the attack of chorea, five were re-examined, and two of these were healthy while three gave good evidence of heart-disease. Dr. Herringham said he had arrived at the following conclusions from his observations, viz., that a large number of choreic patients are liable to rheumatism; that choreic patients are nearly always of a delicate constitution; that chorea is sometimes directly caused by emotion; that it may cause permanent heart-disease; and that it also gives rise to signs of heart-disease which are not permanent.

Dr. Archibald Garrod then read a paper (based upon eighty consecutive cases) dealing with the relation of chorea to rheumatism. Sixty-one of the patients were females and only nineteen males. There was a history of rheumatic fever in the near relations of twenty-six patients, of rheumatism with swollen joints in those of three, and of rheumatism in three more, making a total of thirty-two with rheumatic family histories. The total number of cases in which there was a personal history of rheumatic manifestations other than endocarditis was thirty-six. Dr. Garrod suggested that some cases in which there was no family history of rheumatism and no personal history of joint pains were nevertheless of rheumatic origin, and he quoted cases of rheumatic patients who had previously suffered from chorea, of the development of erythema nodosum and arthritis in the course of apparently non-rheumatic chorea, of chorea with endocarditis and nodules without joint pains, and of the association of acute pericarditis with chorea. In fifteen cases the attack was attributed to fright, but in some of these it was found on inquiry that the fright followed the onset of the chorea. A definite cardiac murmur was heard in forty-five cases, and in six others the first sound was murmurish. In some instances the murmurs developed under observation. The author expressed the opinion that the endocarditis of chorea was probably always of rheumatic origin, but that we had no evidence to show that all chorea was of rheumatic origin, a considerable number of cases being probably due to emotional and other causes.

Dr. Cheadle remarked that rheumatism was something much larger than arthritis. He thought Dr. Herringham had in some points based his inquiries on too narrow a definition of rheumatism, and also he was obliged to neglect those cases in which rheumatic arthritis followed chorea. Truly rheumatic symptoms in children were often very slight and transitory. He was surprised that Dr. Herringham had found fright or emotion a cause in only six cases. He had himself noticed the case of a rheumatic child who had had chorea and had recovered completely; it was taken to the pantomime, and the next day had a violent attack of chorea. Chorea went along with an unstable nervous system, and in a family it was often noticed that the unstable one was the rheumatic. He was inclined to think that much more chorea was rheumatic than was generally supposed, and the absence of a history of arthritis was not to be taken as a proof that the case was of non-rheumatic origin, for the rheumatism might have been overlooked, or might have come on after the chorea.

Dr. Sansom said his experience led him to believe that there was a fright-chorea dissociated from rheumatism. He admitted, of course, that rheumatism was a cause in many cases, but he thought there was definite proof that there were also cases arising in non-rheumatic patients from fright only. Fright would supply a cause for the phenomena noticed in the heart. The first thing that followed on fright was pallor—an inhibition of the heart, with local contraction of the arterioles; after that there was a violent reaction and overaction of the heart, such as might be quite enough to cause injury to the valves. He wished to emphasize two different classes of change found in the choreic heart, viz., 1, those due to rheumatism; 2, a smaller group producing a quite different murmur, sometimes even an aortic diastolic murmur, which was transitory.

Dr. Sturges said he was sorry to see the pan-rheumatic

theory of chorea gaining ground. He thought there was a real relation between chorea and rheumatism, but that there was a tendency to exaggerate this relationship. Dr. Herringham had only been able to trace a direct and immediate connection between rheumatism and chorea in four cases out of eighty, and it was often necessary to seek far in order to find the rheumatic element. He contrasted this with fright, the chorea following which came on usually without an interval. Great divergence of opinion existed abroad. In Germany rheumatism was regarded as a trivial element in chorea, whereas the French thought chorea was a mere manifestation of rheumatism. Osler, in the United States, had put together many cases, and found practically no rheumatic proclivity at all. Dr. Sturges observed that the joint pains in connection with chorea were sometimes rheumatic and sometimes not, and he felt there must be some deeper relation between chorea and the joint affection. He urged the importance of treating chorea during the first (emotional) stage, before movement had commenced.

Dr. Barnes alluded to the relationship existing between chorea and pregnancy, and narrated a case where a child had chorea and was cured, but becoming pregnant in later years the chorea returned with increased severity. Chorea, if evoked by pregnancy, often tended to insanity.

Dr. Stephen Mackenzie thought the evidence had become increasingly strong that rheumatism played a great part in the production of chorea. He admitted the gravity of chorea when occurring in pregnancy, but thought some other factor than gestation must be at work.

Dr. Robert J. Lee regarded chorea as a symptom rather than a disease. Though it might coexist with rheumatism, there was no evidence to show that the two bore to each other any relation of cause and effect. He did not think pregnancy could be looked on as a cause of chorea, for the latter occurred so rarely as a complication.

Dr. Herringham, in replying, said he had restricted his inquiries to arthritis because the evidence of other more equivocal data would be rejected by the sceptical. He could only look on rheumatism as a collection of symptoms, as indeed all diseases were.

Dr. Garrod, in replying, remarked that a good deal of the discussion had turned upon what was really meant by rheumatism. He himself regarded it as a general disease, of which arthritis was but one manifestation.

The prolonged discussions on university education in London, and on the question of university degrees for London medical students, have not been wholly without fruit. It is probably partly due to them that the London University has condescended to somewhat modify its iron regulations and take a few steps toward popularizing its degrees. The infrequency with which the several examinations were held was long regarded as a hardship to students. Being held only annually, either the postponement of, or rejection at, an examination necessarily meant the loss of a year to a student. During the last few years the earlier examinations for the medical degrees have been held half-yearly, and last year it was intimated that the final examination for the degree of Bachelor of Medicine would in future be held twice a year also. It is now announced that this change will be brought into effect at once, which will no doubt be welcomed by many aspirants for the degree.

The Colleges of Physicians and Surgeons have not as yet completed their building project on the Embankment. The Examination Hall has been erected, it is true, and is in use, but the remaining buildings are still unfinished. A legal difficulty bars the way at present, for an injunction has been obtained against the colleges restraining them from proceeding further with the buildings, on the ground of interference with the light of the adjoining houses. The authorities of the two colleges are conferring about the matter, and it is hoped some method of carrying out the scheme—possibly somewhat modified—may be devised.

The weather here is often abused, and not without reason. That of last year was certainly exceptionally bad. It is, therefore, gratifying to find that the public health did not apparently suffer in consequence, for during 1888 the death-rate per 1,000 persons living in London fell to 18.5. During the years 1881–87, inclusive, it averaged 20.4 per 1,000 annually, which compares favorably with the death-rate of any other large city on the face of the globe, but the rate for last year was phenomenally low.

OUR PARIS LETTER.

(From our Special Correspondent.)

SOME INTERESTING POINTS ON STROPHANTHUS—AN INDIGESTIBLE SPOON AND LAPAROTOMY.

PARIS, January 18, 1889.

AT the meeting of the Academy of Medicine of last week, Dr. Bucquoy read a note on the action of strophanthus, or rather the two species of strophanthus, the one from the west, the other from the east of tropical Africa, both of which have an identical action and are very favorable in diseases of the heart when they are appropriately employed. He prefers the employment of the plant to that of strophanthine, the history of which, even the chemical, is still but little known. Dr. Dujardin-Beaumetz accepted the greater part of the conclusions of Dr. Bucquoy, and pointed out the remarkable diuretic action of this medicament. In albuminous nephritis Dr. Bucquoy did not find it useful. Dr. Dujardin-Beaumetz, on the contrary, sometimes found it beneficial. This depends on the conditions in which is produced this albuminous nephritis. In cases of renal insufficiency Dr. Dujardin-Beaumetz has obtained, with strophanthus and sparteine, excellent results, but in acute affections of the kidneys it is evidently contraindicated. In cases of sclerosis strophanthus often produces effects superior to those of digitalis. Its only inconvenience is that it produces diarrhœa by its prolonged use; hæmaturia is an absolutely exceptional occurrence. All depends on the state of the myocardium with regard to the result. Of all the preparations of strophanthus Dr. Dujardin-Beaumetz prefers the tincture in the proportion of one-fifth, of which he employs five or six drops morning and evening. He has tried, as a substitute for strophanthus, the oleander, which he administers in the form of extract, in doses of from ten to twenty centigrammes. The effects are absolutely analogous to those of strophanthus, but are less constant. Dr. Dujardin-Beaumetz adds that it is necessary to make new researches on the active principle of the oleander (oleandrine), which is as yet not well known. Professor Germain Sée then took up the subject at the following meeting, and spoke not only of strophanthus, but of cardiac medicaments in general, and also of cardiac affections, which, he said, may permit patients to live a very long time, even without functional troubles. A great number of the diseases of the heart produce no functional trouble whatever, and are discovered only on auscultation. M. Sée prefers alkaloids to extracts, and the different parts of the plants in their entirety. It is said that digitaline is not worth digitalis, but M. Sée thinks it preferable to all the preparations of this plant. Cafeine has become a cardiac remedy of the first order, as it is a marvellous diuretic—diuresis is an effect necessary to obtain in all cases of asystolie. Cafeine should not be confounded with coffee. Cafeine is found in a great number of other substances. It is now very much employed, particularly since it has been rendered soluble, under the form of the benzoate or the salicylate of cafeine. Theine presents a complete analogy with cafeine, and probably it is sold under the name of cafeine in certain pharmacies. Theobromine, taken from chocolate, also renders great service in cardiac affections. M. Sée then drew a comparison between the action of strophanthine and that of other cardiac medicaments. Cardiac affections, he said, form one of the most important chapters of pathology. A cardiac drug should have an elective action on one of

the elements of the heart. There are three symptoms which are to be combated, viz., dyspnœa, which is the most important phenomenon, compensatory hypertrophy of the heart, and dropsies. The best of all the medicaments for these conditions is the iodide of potassium, which, however, has one defect, and that is in not being diuretic. It is an antidyspnœic and a hyperæmiant of the first order. Among the toni-cardiac medicaments are digitalis, convallamarine, the salts of potash, sparteine, and strophanthus. Among diuretics the best is calomel, then come cafeine and strophanthus. Of these diuretics some act on the general pressure, while the others act directly on the kidneys, such as strophanthus, which produces a "strophanthic nephritis," but here the heart has nothing to do with it. Cafeine likewise does not act on the heart—it is purely a renal medicament. The effect produced must therefore be attributed to the diminution of pressure. For this purpose it will suffice to give the medicament which will best diminish the pressure, viz., chloral. M. Sée has promised to continue the subject at the next meeting of the Academy, when other members who have already signified their intention of doing so will likewise take part in the debate.

A case recalling that of "l'homme à la fourchette," which some years ago had procured for M. Labbé, the well-known surgeon, a certain degree of notoriety, has recently been brought to the notice of the Academy of Medicine by Dr. Le Dentu, who, in the month of November last, operated on a young man, aged twenty-one years, by performing gastrotomy, followed by laparotomy, for the removal of a wooden spoon, twenty-seven centimetres long, which the man had swallowed unintentionally while in the act of imitating jugglers who pretend to swallow swords. This act does not seem to have disconcerted him much, as very soon after he dined as usual without experienceing the least inconvenience. In the evening he went to bed as usual, but about two in the morning he suffered from severe pains and a sense of tearing in the region of the stomach. It was in this state that he walked to the hospital, and was admitted in Dr. Le Dentu's ward, where he was received by two internes who distinctly felt the foreign body about two fingers' wide above the umbilicus; but at the regular visit a few hours after it was not possible to ascertain the position it then occupied. The abdomen was firmly contracted to its full extent. The operation of gastrotomy was nevertheless decided upon for the next day. The patient having been put under chloroform, the stomach was brought to view by an opening through the abdominal wall, and an incision of four centimetres was made into the organ. The index-finger was then introduced into the cavity of the stomach, but no foreign body was found. An exploration was made through the wound in the hypochondrium, and the spoon was found vertically placed in the pelvis, one of the extremities was applied to the bladder, and the other lay behind the linea alba and reached three or four centimetres above the umbilicus. Dr. Le Dentu then incised the linea alba to the extent of from nine to ten inches, and removed the spoon without much difficulty. The most minute examination could not lead to the discovery of the part of the stomach which was perforated by the spoon. The patient is now quite well.

THE USE OF DRY CUPS IN DIAGNOSIS AND THERAPEUTICS.

To the Editor of The Medical Record.

Sir: Dr. George White, of Chicago, has communicated a very interesting and practical paper to The Medical Record of January 26, 1889, on "Cupping Glasses as Diagnostic and Therapeutic Means." If it be true, as the doctor's experience leads him to believe, that "the use of these little instruments has fallen into decay," then I think there is need of a resurrection. A paper might be written on the lost arts of medicine, and we are too much disposed, in seizing the valuable new remedies, to neglect those results of careful clinical experience which descended from therapeutists who in some respects were better than those of our present time. All that modern investigation has done in some instances is to show us the scientific reasons for the effects of older experimental methods. The modern antiseptic discoveries are a marked illustration of this, since a large proportion of the medicines used in all time has been of an antiseptic character. In later years the microbe has been dragged from its obscurity and the reason explained why germicides are so valuable in the relief and prevention of disease. I think that in the presence of the old and the new we should occupy the same impartial attitude to each, and hold fast that which is good. I have always found dry cups of great value in renal disease, pulmonary congestions, local rheumatisms, and kindred affections. When an interne at Bellevue I was very much struck by the effect which they exerted on a patient whom I observed while passing through one of the wards, and who was sitting up in bed, bent forward in the effort to relieve a very severe pulmonary congestion. The situation was critical, but by covering the posterior thoracic wall with cups the dyspnœa was soon relieved. Probably others have thought of the use of these agents for diagnosis in renal diseases, but I do not know of any articles which refer to this subject except Dr. White's and my own. In a paper which I read on the "Treatment of Bright's Disease" before the Section on Materia Medica and Therapeutics of the New York Academy of Medicine, December 15, 1886, the following reference is made to the use of dry cups:[1]

"Dry cupping to the loins relieves renal congestion and favors diuresis. By this temporary abstraction of blood into the subcutaneous capillaries a diminished pressure is produced in the lumbar arteries, which supply the integuments of the loins, and this diverts a certain amount of blood from the renal arteries. The object of the cupping is to draw the blood into the capillaries, in order that it may be taken up and removed by the veins. The cups should be removed as soon as filled, and reapplied. No cups are better for the application of this remedy than the ordinary tumbler, which is always at hand. A good method of applying these is to dampen the bottom of the glass, so that the piece of loose dry cotton which is to occupy the bottom of the glass does not fall out when the cup is used. The skin is to be moistened with warm water, and the glass applied instantly after the cotton is lighted, when an excellent vacuum is produced, and the integument rises into the glass. The cupping glass with rubber bulb is also a convenient instrument for dry cupping. It has seemed to me that when the blood under the cups remained purple and stagnant after their removal, this indicated marked renal congestion, and that the reddened integument more quickly recovered its color in proportion as those symptoms disappeared which implied the presence of an excessive amount of blood in the kidney."

This subject is worthy of further study. Dry cups are valuable as affording an external remedy which is prompt and efficient, and often a most desirable substitute for medicines. Probably they will develop uses in other branches of diagnosis if the mechanism of their effects is carefully observed.

F. A. Burrall, M.D.

48 West Seventeenth Street, New York.

SCHOOL FOR MALE NURSES.

To the Editor of The Medical Record.

Sir: There is a young man here who has had some experience in nursing, and who desires to become an experienced nurse. He learned somewhere that there was a hospital in New York City that trained young men in that profession free of charge, and came to me for in-

[1] This paper was published in the Therapeutical Gazette of February 15, 1887.

formation. I promised to write and find out what I could, and so appeal to you. By giving me what information you can you will confer a favor upon me, as well as the young man mentioned.

Yours very truly,

BEN. M. LEWIS,
Secretary Y. M. C. A.

YOUNG MEN'S CHRISTIAN ASSOCIATION,
WATERTOWN, N. Y., January 24, 1889.

[The Bellevue Training School for Male Nurses receives young men who pass the qualifying examination, and trains them in Bellevue Hospital. It gives them board and a small sum weekly, and graduates them in two years.]

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 27 to February 2, 1889.

LORING, L. Y., Major and Surgeon. Granted leave of absence for one month on Surgeon's certificate of disability. Par. 1, S. O. 6, Headquarters Department of Arizona, Los Angeles, Cal., January 18, 1889.

PRICE, CURTIS E., Captain and Assistant Surgeon. Leave of absence granted in S. O. No. 257, A. G. O., November 3, 1888, is extended two months. Par. 1, S. O. 21, A. G. O., January 25, 1889.

KILBOURNE, HENRY S., Captain and Assistant Surgeon. Will accompany Battery E, First Artillery, changing station from Vancouver Barracks to Presidio, San Francisco, Cal., as Medical Officer, and upon completion of this duty will report to the Commanding General, Division of the Pacific, for further orders. Par. 2, S. O. 6, Headquarters Department of Colorado, Vancouver Barracks, January 22, 1889.

BURTON, HENRY G., Captain and Assistant Surgeon. Leave of absence granted on Surgeon's certificate of disability, in S. O. No. 19, January 24, 1888, from this office, by direction of the Secretary of War, is extended six months on Surgeon's certificate of disability. Par. 8, S. O. 22, A. G. O., Washington, January 26, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending February 2, 1889.

SCOTT, H. B., Passed Assistant Surgeon. Detached from Naval Hospital, Mare Island, Cal., and granted one year's sick leave.

RHINANTHIN.—A glucosidal substance, similar to digitalin, obtained by Dr. Phipson from the common snapdragon (*Antirrhinum majus*), has been identified by him with rhinanthin, a glucoside extracted twenty years ago by Ludwig from the seeds of rhinanthus hirsutus and R. crista-galli. Dr. Phipson describes rhinanthin as occurring rather plentifully in the leaves and stalks of the snapdragon, from which it can be separated by macerating the plant in cold water for a few days, filtering, and treating the filtrate with a small quantity of lead subacetate, again filtering and removing any excess of lead, and evaporating the liquid to a syrup. After a few days rhinanthin separates in brilliant transparent, colorless rhombic crystals, having a peculiar sweetish-acrid taste, and very soluble in water and in alcohol. A clear, colorless aqueous solution of rhinanthin, heated in a test-tube with a few drops of hydrochloric acid, turns gradually brown, and just after boiling becomes dark and opaque, through the breaking up of the glucoside; a copious reddish-brown precipitate of rhinanthogen is formed, and glucose can be detected in the liquor. This reaction is said to be a very delicate test for the presence of rhinanthin. —*Pharmaceutical Journal.*

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending February 2, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	6	2
Scarlet fever	302	44
Cerebro-spinal meningitis	0	0
Measles	324	21
Diphtheria	178	39
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

FOR THE INFORMATION OF PERSONS DESIRING TO ENTER THE MEDICAL CORPS OF THE UNITED STATES NAVY.—A candidate for examination and appointment in the Medical Corps of the Navy must be between twenty-one and twenty-six years of age, and must apply to the Honorable Secretary of the Navy for permission to appear before the Naval Medical Examining Board. The application must be in the handwriting of the applicant, stating age and place of birth, also the place and State of which he is a permanent resident; and must be accompanied by letters or certificates from persons of repute, testifying, from personal knowledge, to his good habits and moral character, and that he is a citizen of the United States.

Form of Application.

——— ———— ———,

———, 188—.

TO THE HONORABLE SECRETARY OF THE NAVY,
Navy Department, Washington, D. C.:

SIR: I request permission to be examined for an appointment as Assistant Surgeon in the United States Navy.

I was born at ———, and was ——— years of age on the ——— day of ———, 188—, and am a citizen of the United States, residing in ———, county of ———, in the State of ———.

I enclose herewith certificates as to moral character, habits, and citizenship.

Very respectfully,

———— ————

If, in reply to the above, the candidate receive a permit, he will notify the President of the Board of the fact, and request him to appoint a time for his examination. Candidates will be expected to present to the Board testimonials of educational and professional fitness. The Board is required, under oath, to report on the physical, mental, moral, and professional qualifications of the candidate; so that the examinations are necessarily rigid and comprehensive, though simple and practical, and not beyond the attainments of any well-educated physician. A successful candidate, upon the completion of his examination, will be notified by the President of the Board that he has been found qualified. An applicant found "not qualified" may be allowed a second examination after one year, but not a third. No allowance will be made for the expenses of persons undergoing examination, which, if uninterrupted, is usually completed within a week. Appointments will be made as vacancies occur, and in the order of merit reported by the Board, but a qualified candidate, not appointed within a year, must be re-examined. The officers of the Medical Staff of the Navy are as follows: Medical Directors, Medical Inspectors, Surgeons, Passed Assistant Surgeons, and Assistant Surgeons. Vacancies in these grades (by death, or retirement at the age of sixty-two years) are filled in the order of seniority, and

for each step of promotion a physical and professional examination is required by law. The pay of an Assistant Surgeon in the Navy is $1,000 per annum "on leave or waiting orders," $1,400 "on shore duty," $1,700 "at sea," and, when at sea, one ration at thirty cents per diem in addition. Eight cents a mile is the allowance when travelling under orders.

Order of Examination.

1. Physical. 2. Written. 3. Oral. 4. Clinical. 5. Practical.

The physical examination will be very thorough, and the candidate will be required to certify, under oath, that he is free from any mental, physical, or constitutional defects, hereditary taint, or disability of any kind that would be liable to interfere with the efficient performance of duty.

Written examination.—The candidate will be required to address a letter to the Board of Examiners, stating concisely: 1. The date and place of his birth; the school, institution, or college at which he received his general education; the several branches studied, including his knowledge of general literature, and of the ancient and modern languages; the exact title of the medical school or schools at which he received instruction, and, if an Alumnus, the date of his graduation; the name and place of residence of his preceptor, and the time when he commenced the study of medicine; also, the title of the text-books studied or read on chemistry, anatomy, physiology, history, materia medica, pharmacy, therapeutics, theory and practice of medicine, principles and practice of surgery, minor surgery or mechanical therapeutics, medical jurisprudence, toxicology, obstetrics, hygiene, biology, and physics. 2. The opportunities he has had of engaging in the practice of medicine, surgery, and obstetrics, or of receiving clinical instruction; or whether he has or has not been a resident physician or interne in a civil or military hospital. 3. The number of subjects or parts of subjects he has dissected; what opportunity he has had to become familiar with minor surgery and bandaging, chemical and pharmaceutical manipulations, and the physical properties of drugs. The candidate will append to this letter his name in full, post-office address, and his local address at the date of the examination.

A thesis or short essay must next be written (without reference to notes or books) upon some professional or scientific subject indicated by the Board. Written answers will then be required to twelve or more questions, propounded by the Board, on the following subjects: Anatomy, Histology, Physiology, Surgery, Theory and Practice of Medicine, Obstetrics, Materia Medica, Chemistry, Hygiene, Medical Jurisprudence, Toxicology, and Physics.

Oral examination.—The candidate will be examined orally upon his literary and scientific acquirements, including general history, natural science, and English literature, and professionally upon Anatomy (general, special, and surgical), Histology, Physiology, Theory and Practice of Medicine, Principles and Practice of Surgery, Chemistry, Legal Medicine, Toxicology, Materia Medica, Therapeutics, Pharmacy, Obstetrics and Diseases of Women and Children, Hygiene, Microscopy, and Physics. Candidates possessing special knowledge of the higher Mathematics, Astronomy, Geology, Botany, Zoology, Literature, Art and Ancient and Modern Languages, will be given full credit for their proficiency.

The clinical examination of patients will be made by the candidate at a Naval Hospital, and will include the use of the Microscope, Thermometer, Laryngoscope, Ophthalmoscope and other aids to physical diagnosis; after which he will be required to submit a written clinical report on one or more medical or surgical cases.

The practical examination will comprise surgical operation on the cadaver, the application of splints, bandages, and surgical dressings, the use of the microscope (for clinical purposes, and the recognition of pathologcal or other specimens), and chemical and pharmaceutical manipulations. A candidate may withdraw at any period of the examination, with the consent of the Board, and may at a future time present himself for re-examination. The Board may conclude the examination—written, oral, or practical—at any time, and may deviate from this general plan in such manner as it may deem best to insure the interests of the naval service. WILLIAM C. WHITNEY, *Secretary of the Navy.*

MATERNAL IMPRESSIONS.—Dr. T. B. Nichols, of Plattsburg, N. Y., writes: "In THE MEDICAL RECORD of January 12, 1889, page 43, Dr. R. Gross, of Eureka, Cal., cites two cases that came under his observation which are clearly set forth, and which have left him fully 'convinced that in certain cases, in nervous women, shocks may and do leave an impress on the fœtus *in utero*.' Now, though no one can doubt Dr. Gross' honesty, etc., in his belief, as represented in the article above referred to, another person whose mind is differently constituted might naturally inquire, after reading his paper, if the hare-lip and the blistered surface as seen in Dr. Gross' particular cases are really due to maternal impressions, why may not *all* the monstrosities and deformities that are found among or on the newly born children, in the various walks of life, be due to maternal impressions? Every practitioner of large experience in midwifery must have seen large numbers of cases in almost every conceivable variety of deformity that were not traceable to any disturbance of the mother's mental equilibrium. Assuming, then, that the negative is the *general rule*, will someone please rise and give us the *exceptions?*"

ANTISEPTIC SURGERY AT THE HOSPITAL DE LA SALPÊTRIÈRE; USE OF BOILING WATER.—M. Terrillon (Paris) insists particularly upon the value of disinfection of instruments by boiling water. Pasteur's experiments first, and afterward Roux's, have demonstrated that water at 100° C. destroys all pathogenic microbes. It is true that the spores resist this temperature, but they lose the faculty of developing rapidly, and, besides, a second immersion in boiling water some days afterward will kill the microbes to which the germs have given origin. Lastly, as a matter of fact, all the surgeons who have made use of this means of disinfection have had marvellous results. After every operation the cleansed instruments should be plunged for ten minutes into boiling water, and before the next operation, they should be again immersed for ten minutes. Water at 100° C. serves also for the disinfection of silk. After ten minutes' boiling it is placed in bottles filled with Van Swieten's solution or carbolic lotion. At the moment of use it is once again plunged into boiling water. M. Terrillon covers the points of suture with a layer of iodol or iodoform ointment, and strongly recommends the practice.—*Annals of Surgery.*

TAXING PHYSICIANS.—The Salt Lake City Council has recently ordered that all physicians practising in that city shall pay a license tax. The Salt Lake Medical Society has protested strongly against the imposition of the tax, but thus far apparently without success.

A CHEMICAL BALLET.—At a banquet which was given at the conclusion of the German Congress of Naturalists and Physicians at Cologne, Dr. Hoffman alluded to the difficulty experienced by students in understanding the constitution of organic compounds, and suggested an original method of fixing these in their minds. The audience were then treated to a ballet, in which the *danseuses* were dressed in different colors to represent the various atoms. At his command, these colored female atoms grouped themselves in various fashions to show the chemical constitution of particular compounds and their reactions. The composition of benzol and the formation of aniline and its derivatives were particularly applauded. The ballet wound up by a representation of the formula of roburite, the new explosive, the *finale* being a formidable explosion.—*Medical Press.*

The Medical Record

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Original Articles.

THE TREATMENT OF FISTULA IN ANO.

By CHARLES B. KELSEY, M.D.,

NEW YORK.

THE general idea of the operation of cutting a fistula in ano is a very simple one. It is that a director should be introduced into the external orifice, brought out into the rectum through the internal opening, or at a point where its end approaches most nearly to the mucous membrane, then bent and brought out of the anus, and that the tissues upon it should be cut.

This is the idea conveyed to the student by his lectures, and to the practitioner by his text-books on general surgery, and in many, perhaps the majority, of cases, this simple procedure will be curative; for many fistulæ are straight tracks running not very deeply into the tissues, and it is to them, and to them only, that the operation applies. But no practitioner will cut many fistulæ in this off-hand, routine way before meeting with a case in which such an operation will either prove a signal failure or will result in irreparable injury to the parts.

FIG. 1.

Perhaps the first lesson taught by an unexpected failure in effecting a cure by this operation is that a fistulous track is something to be followed by a careful dissection, and not a thing to be laid open by a single sweep of the knife along a director which has, by more or less force, been entered at one opening and made to pass out at the other; for by this course not only is the track often left in great part undivided, but the director is forced into healthy tissue and parts are needlessly sacrificed.

Instead of this, the track should be followed step by step from its external opening along its whole course; and to do this the director need only be introduced a short distance at a time. By thus following carefully the course of the fistula no unnecessary sacrifice is made of adjacent healthy tissue, and side-tracks or diverticula are recognized as they are met. This is much easier than to pick them out in the bottom of an extensive bleeding and irregular wound.

A word about the director. The one ordinarily used is too blunt at the end for fine work. It should be of steel, delicately made, and probe pointed (Fig. 1); silver is too flexible for ordinary work. These have been made for me in three sizes by Tiemann.

With regard to side-tracks, or branching diverticula, the rule is that all such should be dissected up exactly as the main track should be; but to this there are very important exceptions. The rule may perhaps be modified in this way. As many tracks should be divided as can be done without the risk of incontinence of fæces in either sex, or of destruction of the perineum in women, or of too great injury for the reparative powers of the patient.

As a rule, both the sphincters in either sex may be divided once in the median line without danger of incontinence. It is better, however, to divide as little as possible. The inner should be left intact, if possible; the division should be straight across the muscular fibre and not slanting; and a double division of one, and especially of both sphincters, should not be resorted to as a primary operation. In women and phthisical patients there is more risk than in men otherwise healthy.

In these modifications of the rule of complete division cases of tracks running upward along the bowel are not included, for these should be divided as are those nearer the anus.

Here the supposed danger of hemorrhage often stops the operator with his work half completed; and one of these tracks will often heal spontaneously after the opening of the lower one into which it empties. But it is not safe to trust to this chance. These upward branches are of two distinct kinds. In one the track runs directly beneath the mucous membrane, and may be so found with the director; and in this there is little danger of hemorrhage in its division, for the blood-vessels are all beneath it. In the other variety the track runs deeper in the wall of the gut, under the muscular layers, perhaps even away from the rectal wall into the perirectal tissues. In such cases there is great danger of hemorrhage, and the

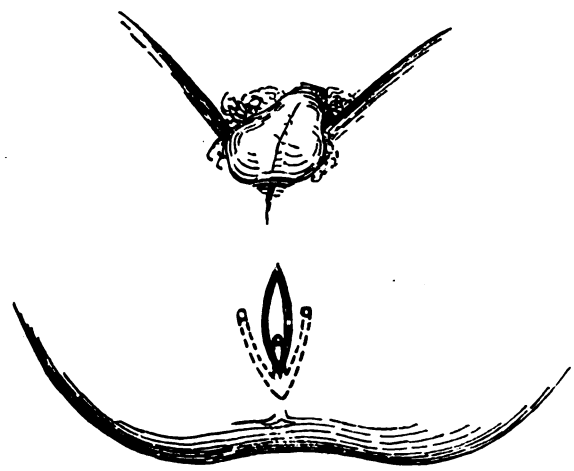

FIG. 2.

division may be more safely done with the elastic ligature or the enterotome.

The exceptions to this rule of complete division will be found in three classes of cases—those of the horse-shoe variety, the recto-labial variety, and the old cases of extensive disease, where the whole anal and perineal regions are riddled with openings. In these cases all the ingenuity the operator possesses will be demanded to effect a cure without resulting incontinence.

Horse-shoe fistula has been defined differently by different writers. In a typical case it is a form of fistula in which there are one or more external openings on each side of the anus and an inner opening in the rectum in the median line behind. It is shown in Fig. 2, after Goodsall.[1] But a horse-shoe fistula may have only one external opening and yet the abscess which has caused it may almost entirely surround the gut. Nor need the internal orifice be in the median line, either behind or in front. The name applies better to the shape of the abscess which has resulted in fistula than to the location of the openings. In this form of disease the pus in its burrowing has extended from one side of the gut to the other, and the resulting fistula may be complete, incom-

[1] British Medical Journal, 1888.

plete, or of the blind internal variety. The internal opening may be at any point, and the external may be on the opposite side of the body from it (Fig. 3).

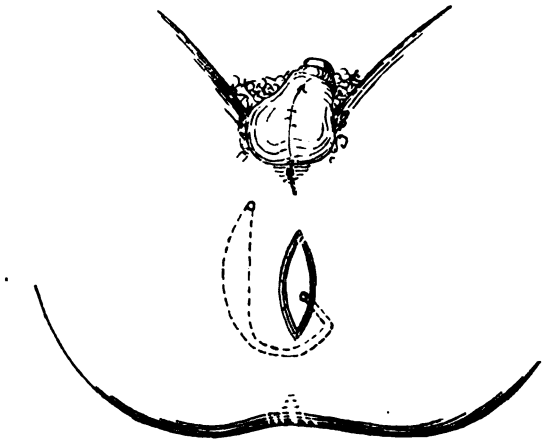

Fig. 3.

In these cases I think it will generally be observed that the openings do not lead into distinct fistulous tracks of any great extent, but rather into one abscess cavity of considerable size.

It is evident that in operating upon such cases as these there is a chance for much skill in effecting a cure at one operation, and still preserving the sphincteric power. And I may say that a patient who has been left with incontinence of fæces after this operation is apt to be very unforgiving, especially when it happens to be a lady who has been rendered loathsome to herself, afraid to trust herself in society, and doomed to the constant wearing of a napkin. I have seen several such, and by means to be referred to have relieved some, but from the ill-fortune

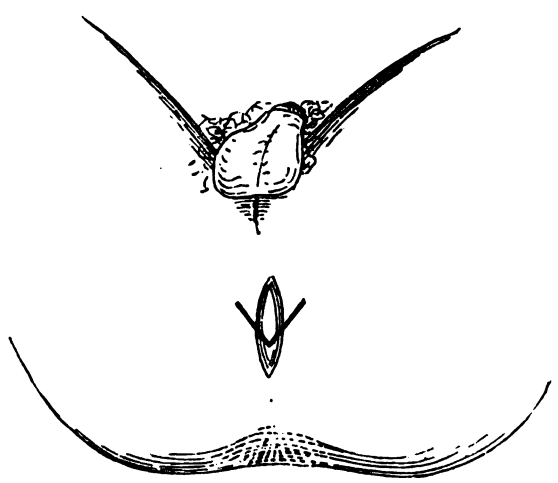

Fig. 4.

of others I have come to warn my own patients that incontinence may possibly result, when I see any reason to anticipate such a conclusion.

Taking now a case of horse-shoe fistula, such as is shown in Fig. 2. The ordinary operation would consist in two complete divisions of the sphincters on opposite sides (Fig. 4), probably resulting in incontinence. The correct method, as is shown by Goodsall, consists in one complete posterior division, and then the opening of the lateral tracks into this posterior cut, as shown in Fig. 5.

This principle may be made to cover nearly all of this class of cases. Where several external openings are grouped around the anus they may all be connected by one incision, and from this incision a probe may be passed through the internal opening, and this, too, divided with the sphincter.

In case the external opening be at a considerable distance from the anus, and on the opposite side of the body from the internal, as shown in Fig. 3—drawn from a case of my own—the method is essentially the same, the thing to be avoided being a slanting cut through the rectum and healthy tissue. By following the ordinary rule in such a case—passing a director into one opening and out of the other and cutting upon it—all but a small portion of the lower end of the bowel would be completely severed by a deep incision. Fig. 6 shows the cuts that were made by which a cure was effected without incontinence.

It may easily occur that in a complicated case it is found impossible to divide all of the tracks without a double or even triple division of the muscles. In such cases the safer practice is to do such an operation as has been indicated upon all the tracks that can be included

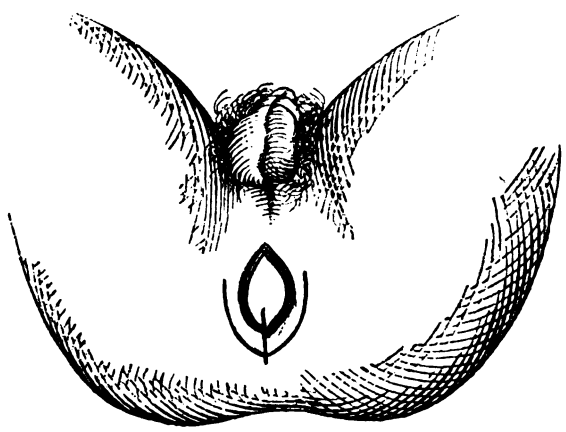

Fig. 5.

in a single division of the muscle, and to trust to other means of cure for the balance, at least till the first wound has healed.

The most reliable of these other means is the injection of strong tincture of iodine into the uncut tracks. Many of them will have been thoroughly drained by the first incisions and will heal with the additional stimulus of this treatment. They may even be thoroughly cauterized with fused nitrate of silver at the time of the operation.

The second class of cases in which it may be unjustifiable to divide all the tracks at the primary operation is that of the recto-labial fistulæ.

This form of disease is in most cases due to inflammation of one or both vulvo-vaginal glands or their ducts, leading to suppuration and the final escape of pus, both on the labia and within the rectum. There may be numerous external and internal openings. In the case shown in Fig. 7, recently operated upon in consultation with Dr. Kennedy, there was a labial opening on each side. The right track had opened on the anterior wall of the rectum in two places, the left in one, and the right

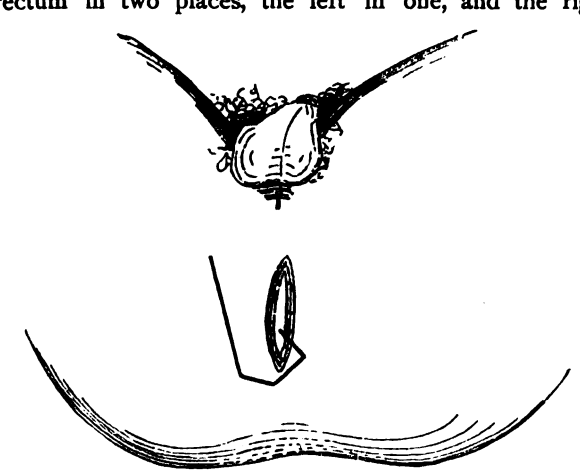

Fig. 6.

and left tracks communicated by a submucous track n the rectum. In such a case the division of both tracks would result in a complete double division of the whole perineum, as well as of the external sphincter.

The cuts made at the primary operation are shown in Fig. 8.

A probe was first passed through the track on the right side, from the external opening down to the verge of the anus, its end cut down upon and brought out through the skin of the perineum at the point B. From this point it

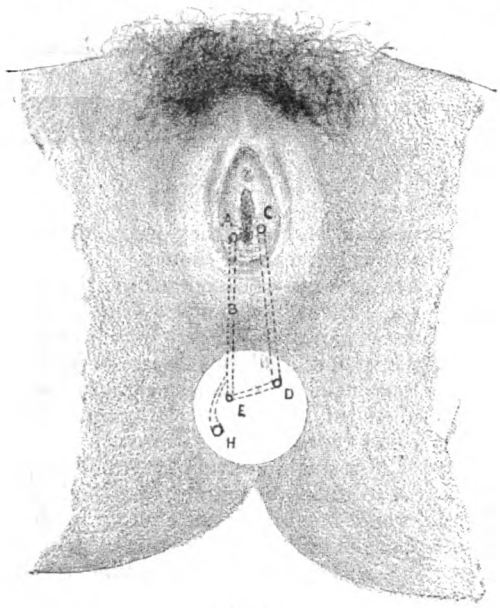

FIG. 7.

was carried along the fistula to the internal opening on the same side, and this part of the track divided with the sphincter. The director was then again passed from the opening D to the first cut, and the cross-track divided. Finally, all of the submucous tracks were slit up, and the track on the left side, from its internal opening as far as was possible, without complete division of the sphincter at that point. Setons were then passed along what remained of the original tracks and tied. The result was not a perfect cure in the first instance, only the rectal

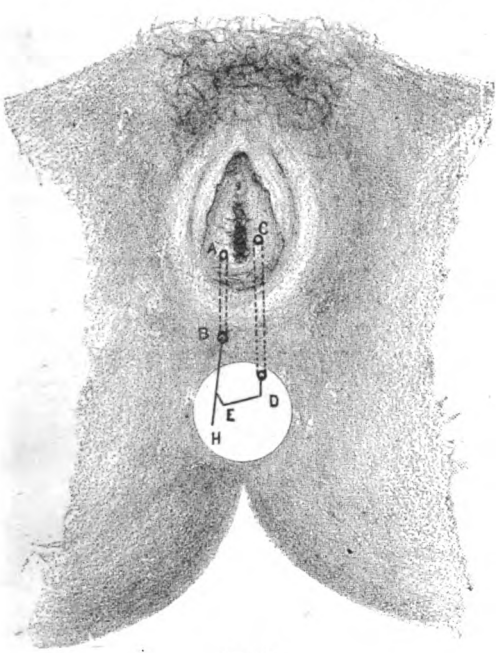

FIG. 8.

tracks being closed, but by the primary operation the subsequent treatment of the two straight perineal tracks was rendered much simpler.

Dr. I. E. Taylor [1] has made a careful study of this rare form of disease, and describes two different methods of operating, both, however, with the elastic ligature. The first is that recommended by Barton, in which a ligature is passed from the labial to the rectal orifice and brought out at the anus; an eyed probe is then passed from the labial orifice down along the perineum till it reaches just outside of the sphincter ani low down, its point is cut down upon, and the labial end of the ligature is drawn through this artificial opening and the ends fastened. The other operation is the same, except that the stages are reversed, the artificial opening being first made and the ligature passed from this through the rectal opening and brought out at the anus. In this way the track through the perineum is not divided, but is left to close with appropriate stimulating applications.

The blind internal fistula is the one which, more than all others, leads to mistakes in diagnosis. The absence of any external orifice misleads the superficial examiner at the beginning, and the failure to make a thorough examination completes the error.

There are two signs of this condition which will in every case lead to a correct diagnosis. The one is the discovery of the internal orifice, the other, the induration which invariably attends a track of any size. Again, there is something significant in the history, and I have learned by experience, when a patient gives all the usual symptoms of fissure, and yet has no fissure, to examine, under ether, for a blind internal fistula. I say examine *under ether* advisedly, for a complete examination without ether and a large-bladed speculum is an impossibility. Often a careful search over the lower three inches of mucous membrane will reveal a small ulcerated opening, and a probe passed into this will run for an inch or so under the mucous membrane. In other cases the finger will first detect an indurated spot or track, and a careful examination of this will show the opening of the fistula. In the submucous variety there is little or no induration, while in the submuscular the induration is likely to be distinct.

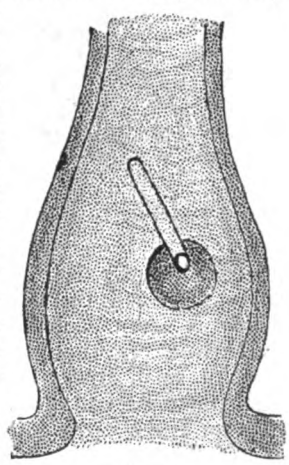

FIG. 9.

This variety of fistula is not, in my experience, very uncommon. It may arise from an abscess which has pointed into the rectum and not on the skin, or it may be due to an inflammatory or ulcerative process commencing in the rectal wall and resulting in perforation, such as tubercular disease. It is sometimes caused by inflammation of an internal hæmorrhoid, and I have seen several cases directly and unmistakably due to the injection of carbolic acid into hæmorrhoids.

The acid not infrequently sets up a circumscribed inflammation, which results in a small abscess breaking on the mucous surface, and burrowing under the mucous membrane, if it has been deposited directly under the surface; or under the muscular coat, if it has been more deeply placed. These fistulæ are generally not very extensive, the track being an inch or so long and generally single, unless more than one injection has been followed by the same result. In a feeble patient with phthisis and relaxed fibre I have seen the mucous membrane undermined in almost every direction as a result of a course of treatment with injections of thirty-three per cent. acid; and in a patient of different fibre I have seen a large abscess of the ischio-rectal fossa, with brawny swelling of the buttock, bursting high up in the rectum, follow an injection of the pure acid.

The larger the abscess and the larger the opening into the rectum—it is sometimes so large that the end of the finger will pass into it—the easier the diagnosis. It is only the lesser forms of the disease that are liable to be

[1] Transactions New York State Medical Association, 1885.

overlooked, and yet even the lesser ones may render a patient's life very miserable.

There are two other points in the diagnosis of this affection that may be useful. One is, that the internal orifice when small may sometimes be detected by gentle pressure on the adjacent parts which shall force a drop of clear pus out of it; the other is, that in cases of circumscribed ulcer which refuse to heal under treatment, a blind track leading from the base of the ulcer should always be carefully searched for.

The treatment is simple in theory, but sometimes difficult to carry out. Large abscesses of the superior pelvi rectal space which have opened into the rectum should be treated by the introduction of drainage-tube, and daily washing out with boracic acid solution. Those located in the ischio-rectal fossa should be opened on the skin, thoroughly cleaned out, and treated by drainage and

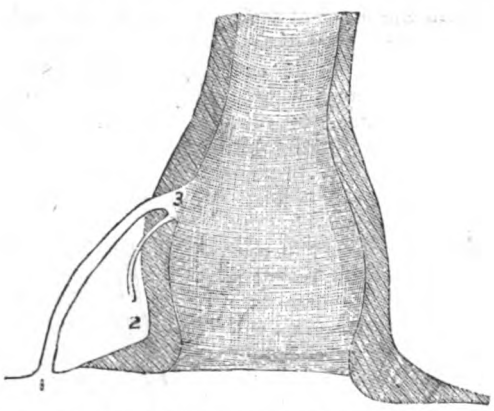

FIG. 10.—Fistula with Double Track. 1, Original incision; 2, secondary track; 3, ulcer remaining.

injections to give the internal opening a chance to close without dividing the tissue between the two openings, which is often considerable. Should this fail the ordinary operation may be done. In the lesser cases of small tracks without abscess cavity the track must be laid open. The rule is to enter a director at the opening into the bowel, bend it so as to follow the track, and then lay the latter open by cutting. When the track runs upward, as in Fig. 9—which, by the way, was a case due to carbolic acid, which attracted considerable attention before the cause of the patient's suffering was discovered—this is not difficult, but when it runs toward the skin, and both opening and track are small, as in Fig. 10, it is a very difficult and uncertain proceeding. Where the induration approaches near enough to the surface to be easily felt, I have in some cases cut directly down upon this through the skin without any director, and have then found no difficulty in passing a director onward through the internal opening. If, however, there is no friendly induration to guide the knife, the track must be carefully dissected out from the internal opening. It is easy under these circumstances to make a false passage with the director, and thus lose the true one, and fail, in spite of free cutting, to cure the case.

In the case pictured in Fig. 10 I found it nearly impossible to follow the track with a bent probe, the opening being a considerable distance from the anus, but it was finally satisfactorily laid open with the curved knife shown in Fig. 11. These are operations requiring patience and care, but with the rectum well exposed, under ether, there need be no difficulty. The knife of my own invention (Fig. 12) is sometimes very useful in these cases.

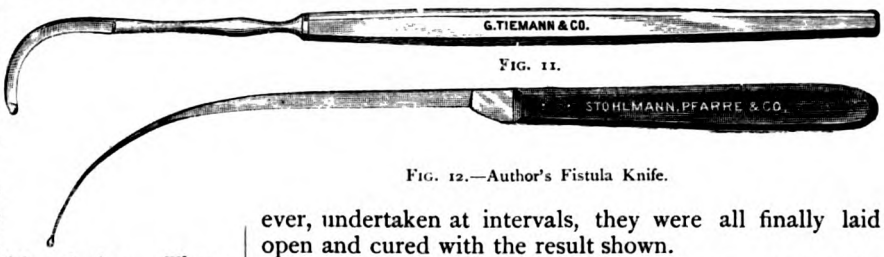

FIG. 11.

FIG. 12.—Author's Fistula Knife.

In fistulæ with very long and deep tracks, or in those with many smaller ones, a cure without an amount of cutting which shall necessarily lead to incontinence may be impossible. Fig. 13 is taken from a case of the latter variety, where the openings and tracks were so numerous, and the patient's general condition so bad, that a cure was for some time despaired of. By several operations, however, undertaken at intervals, they were all finally laid open and cured with the result shown.

In these cases care must be exercised not to overtax the strength of the patient by too much cutting at any one time. The tracks can often be divided into two or three main ones, each with secondary side-tracks, and it is better to attack one main track and its branches at a sitting, leaving the others till the patient has gained strength by change of air and appropriate treatment.

In the cases of a single but very long and deep track it may not be best to divide everything at a single sitting, as, for example, where one opening is high up in the rectum and the other in the middle of the thigh. The question as to how much it is safe to do at one time must depend in great measure upon the strength of the patient; and it is often better to begin at the external opening and follow the fistula up to the buttock at one operation, leaving the remainder for treatment by injections or subsequent cutting.

In these deep tracks a galvano-cautery knife or wire may be better than a bistoury. A very strong knife may easily be broken in such a case as is shown in Fig. 14. The external opening here was over the great trochanter, and the case was very naturally mistaken for hip-joint disease by several operators. The track had been laid open under this impression several times, but never induced to heal. It finally came under the care of Dr. H. M. Lewis, of Brooklyn, who succeeded in passing a probe into the gut, but the knife broke in the callous tissue. An écraseur was next used, with the strongest picture-cord doubled, and this was broken. Finally the ingenious idea occurred to the operator of passing a chain-saw, and by this means

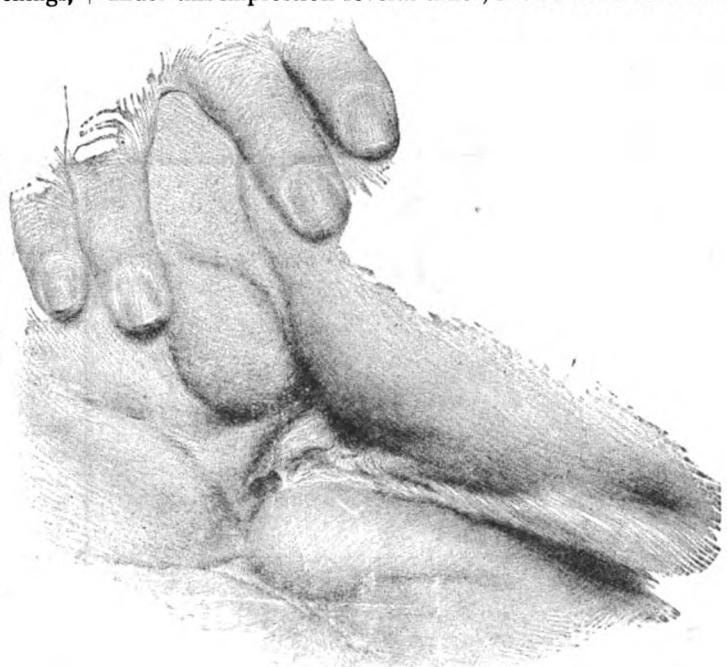

FIG. 13.

the cicatricial tissue was finally divided and the patient cured.

The cause of incontinence after operation for fistula has been the subject of considerable argument, for in some cases a single incision through the external sphincter has been followed by this untoward accident, while in others very extensive and numerous incisions have left the patient still with good control. Smith believes it to be due not

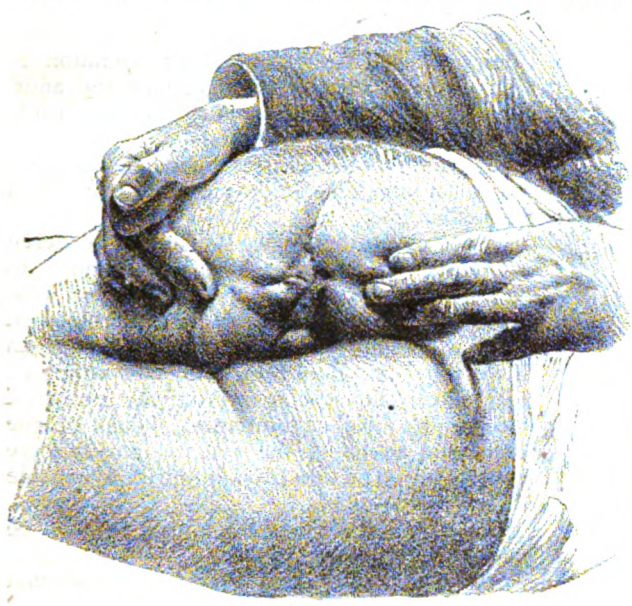

Fig. 14.

so much to the division of the sphincters as to division of the circular muscular fibres of the lower part of the rectum; while Esmarch holds rather to the theory that it is due to division of the nerves supplying the muscle more than to the division of muscular fibres.

In my own mind the explanation lies in the fact of vicious cicatrization, by which the ends of the divided muscles are not brought into apposition in healing. On this supposition it is easy to understand why a single cut may result in loss of muscular power, the ends of the sphincter being separated by an interval of half an inch, and the muscle therefore having no fixed point of support;

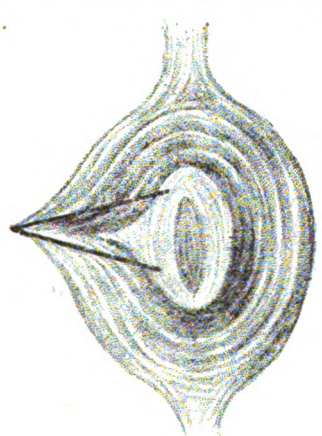

Fig. 15.

while in other cases several incisions which have healed properly may still leave the segments of the muscle in shape to act as one undivided circle. The simplest form of the same condition is seen in lacerated perineum in the female. Here a single rent is followed by almost complete incontinence, and although the perineum may be perfectly restored by operation there will be no return of sphincteric power till the cut and separated ends of the muscle are brought into apposition.

The condition is one which entails a greater or lesser degree of misery, depending upon the consistency of the fæces, and the regularity with which they are voided. To a man who has one solid, natural evacuation before going from his house in the morning, there may be no suffering and little annoyance, except what arises from the involuntary escape of wind and the soiling of the person with the natural mucous secretion of the bowel. The fact of inability to control the passage does not necessarily imply that the passages escape in a way to cause annoyance, for when they are of natural consistence and passed with regularity there is generally sufficient warning to allow the patient to seek the closet, which he has learned never to be far away from at a certain hour. The greatest suffering comes in women when the bowels are loose; then there is absolutely no chance to avoid the consequences; a napkin is constantly worn, and the patient soon becomes a confirmed invalid.

If the anus be open and patulous, more or less prolapsus may follow; and this is a fresh cause of tenesmus and discharge, complicating and increasing the original trouble. The train of nervous symptoms following this condition is often in itself serious, and apparently out of proportion to the physical disability.

In the treatment of this condition the operator has an ample field for the exercise of all his ingenuity, for no

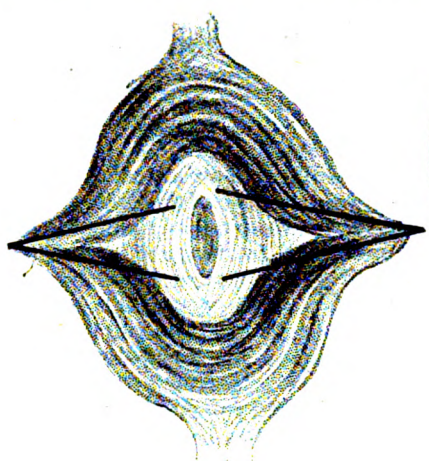

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Fig. 16.

two cases will be found exactly alike, and the operations must vary accordingly.

Some will be seen at a glance to be manifestly incurable, such, for example, as the one shown in Fig. 13, where the sphincters have been cut again and again in different directions, till the anus has lost entirely its original shape, and it would be difficult to find any trace of the sphincter by the most careful dissection. Most cases, however, are amenable to operation and relief, and a successful operation brings much sincere gratitude to the operator.

There are two guiding principles in operating. The first is, to find the ends of the sphincter and unite them by suture; the second is applicable where the first is impossible, and consists in producing an artificial tightening and closure of the anus, without much regard to sphincteric action.

The first indication may often be followed out at the time of the original operation for fistula, and is, in fact, done in the operation for immediate closure of the incision by suture of the wound, under antiseptic precautions. In extensive tracks and abscess cavities the operation may fail, but in single deep cuts it often succeeds, and it is always worthy of trial with the object of obtaining direct and immediate union of the ends of the muscle and avoiding possible incontinence.

In cases such as are shown in Figs. 15 and 16 the operation is the same as in lacerated perineum—cutting down upon the ends of the muscle, freshening the edges of the original incision, and bringing them together with wire or catgut sutures.

In a case such as is shown in Fig. 17 the operation is much more complicated. This patient, in spite of all the

cutting which had been done, was still suffering from a blind, internal fistula when he came under my care. In the figure the parts are not at all stretched open. The anus is seen as an irregular circle composed of cicatricial tissue, which held it wide open. The cicatrix extended an inch

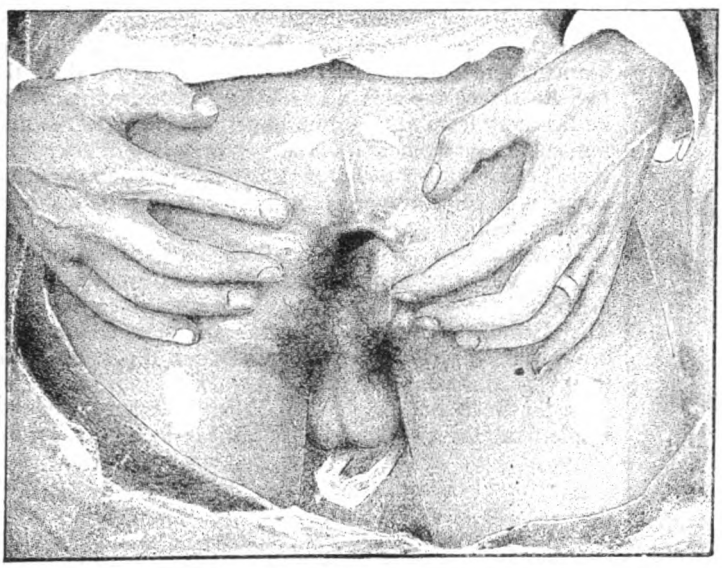


Fig. 17.

and a half into the rectum on all sides, and no mucous membrane was seen till beyond this point. The anus and lower part of the rectum presented an open tube about an inch in diameter, entirely without any power of muscular contraction. At the point where the folds of mucous membrane first appeared there was an opening leading into a deep sinus in the right buttock, and this was opened up, relieving the patient of the pain and purulent discharge from which he suffered.

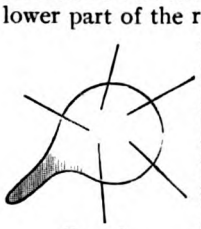


Fig. 18.

Even in this case, with anus and lower part of rectum converted into an open, unyielding tube, the patient did not complain of incontinence, though there could have been no action of either sphincters or levator,

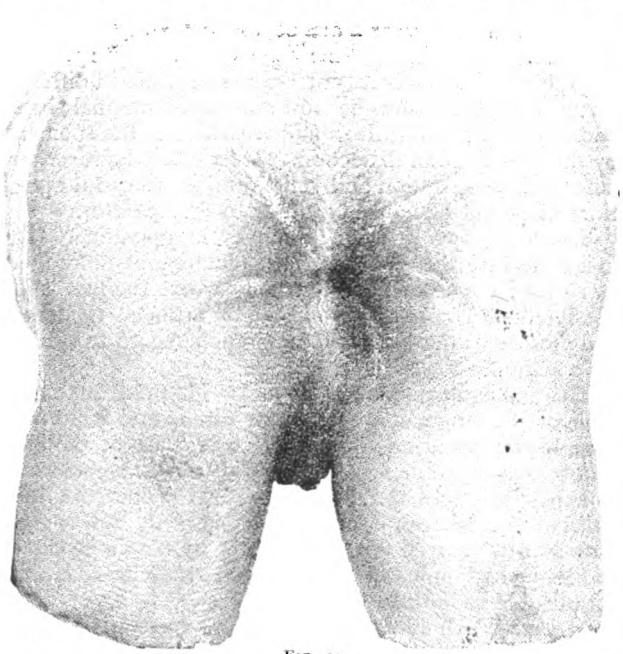


Fig. 19.

and hence no control. He simply had a natural passage every morning, and was never subject to diarrhœa.

In such a case the anus could only be closed by a plastic operation. The plan I proposed was to dissect the mucous membrane loose, draw it down, and stitch it to the skin, after freshening the cicatricial ring of the anus, so as to first give a mucous lining to the parts; then, by a subsequent plastic operation, or perhaps by the cautery-iron, to close the outlet of the canal. But after the fistula was cured, the patient, suffering really no inconvenience, declined further operation. The case proves better than any I have ever seen that loss of sphincteric power is not always attended by any inconvenience.

In the second edition of my work on the rectum I described and figured the other operation to which I have referred for tightening the anus. Fig. 18 shows the cicatrix and the burnings made by the actual cautery for its relief.

Fig. 19 shows the result in tightening the anus, and at the same time, in drawing it to one side of the median line.

In this way the orifice is simply rendered smaller, and the muscles have more chance to close it. The levator ani, the internal, and what remains of the external sphincters, by combined action will compress, and, in a measure, close an orifice which has thus been artificially strictured to an extent sufficient to prevent the escape of fæces under most circumstances, though of true sphincteric action of the external muscle there is very little. The operation, however, is capable of giving great relief.

There is another point which may, perhaps, be touched upon with advantage.

In the great majority of fistulæ there is an internal opening into the rectum, but there are many exceptions to this rule, and these must be taken into consideration in operating. For example, the young operator passes a stiff, blunt director into the external opening and feels for its end in the rectum, but cannot find it. Believing that there must be an internal opening, he probes carefully for a few moments and then begins to use force. After a time the end is felt just outside the wall of the bowel, and is pushed through and brought out at the anus, and the incision is made, but it is easy to see that in only a very small proportion of cases can such an incision follow the fistula. In most cases a false track has been made, and in many the sphincters have been unnecessarily divided.

The rule, I think, should be this: Begin the dissection at the external opening, and follow the track along inch by inch. If it lead into the rectum there will be no difficulty in finding the opening, and then the sphincter may be cut. If it lead away from the rectum there can be no justification for forcing the incision into the rectum. Sometimes it will be found that the track leads close up to the rectal wall, but the exact point of perforation, if there be any, may not be found. In such cases it is better to make an opening into the bowel and divide the sphincter; for where nothing but rectal wall, and perhaps mucous membrane intervenes between the fistula and the cavity of the bowel, a perforation will probably take place after the operation, even if it does not exist at the time.

Treatment of Frost-bites.—The best remedies for frost-bites, according to M. Ch. Eloy, writing in the *Bulletin Général de Clinique et de Thérapeutique*, are local applications of nitrate of silver, oxide of zinc, iodine, and iodoform. Nitrate of silver may be applied in solution, 3 grains to the ounce, or in ointment, 4½ grains to the ounce. Oxide of zinc is used in an ointment of 75 grains to the ounce of vaseline. Billroth uses an application of 12 grains of metallic iodine to an ounce of vaseline, using sometimes, also, compresses wet with a mixture of one part of cherry-laurel water to three parts of distilled water. Finally, a very useful application is a mixture of 24 grains of iodoform in an ounce of collodion.

THE TREATMENT OF TYPHOID FEVER.[1]

By SIMON BARUCH, M.D.,

ATTENDING PHYSICIAN TO THE MANHATTAN GENERAL HOSPITAL AND THE NEW YORK JUVENILE ASYLUM.

I DESIRE to confine my remarks to the treatment of typhoid fever, because I have recently revised my experience, with the result of reaching some decided views, which differ radically from those advocated here to-day, as well as from those entertained by the profession generally in this country, and, up to a recent period, by myself also.

These views are the result of mature deliberation and sifting of evidence afforded by clinical and experimental data obtained from various sources and compared with my own.

The various methods of treatment advocated during my professional career of thirty years are doubtless familiar to you. About ten years ago I had settled upon the Ziemssen graduated cold-bath treatment as the most promising, and I obtained more satisfactory results from it than from any other. Still, when other antipyretic methods came into vogue, with so much promise of success based upon the idea that the reduction of high temperature was the chief desideratum, it was natural for me to be carried away upon the tide which has so completely swept over the profession, especially as the treatment by cold baths involved so much trouble, and proved so disagreeable to many patients and their friends. Gradually the milder forms of bathing, by wet pack and sponging, with quinine, thallin, kairin, antipyrin, the ice-coil, and later antifebrin and phenacetin, have assumed potent sway over the profession.

A review of my experience in the last decennium, derived from personal observation in private and hospital practice, and in that of many colleagues, as well as from society discussions, develops the fact that the mortality of typhoid fever has not been reduced by the antipyretic method of treatment. I ask you to follow me carefully in a fair, conscientious, and exhaustive, yet brief, review of the results of the various methods in vogue during the past twenty-five years, and to compare it, as I have done for myself, with your own experience. You will then, I opine, agree with me that we stand to-day upon the threshold of a great epoch in the treatment of typhoid fever.

You have heard how fatal is typhoid fever at the present time, and I might offer you additional evidence by statistics I have gathered from the New York City Board of Health, from 1876–1885, during which time 7,712 cases of typhoid fever had been reported, with a mortality of 3,184, or 41.28 per cent. But as these statistics may be doubted by some, I will quote to you the mortality of typhoid fever in the New York hospitals, as stated by Dr. Delafield in 1885, which he has computed at 24.66 per cent. This mortality is even larger than that furnished by the recently gathered careful statistics in Germany, which show that, under the expectant treatment, of 11,124 cases the mortality amounted to 21.7 per cent. These statistics, to which others may readily be added, were they not sufficiently large, present to us the appalling fatality of typhoid fever under the now prevalent expectant, antipyretic plan, which seeks, by nourishing the patient, placing him in good hygienic surroundings, combating complications, and reducing the temperature, to conduct him to a safe issue. Much stress has, as you are aware, been placed during the past quarter of a century upon high temperature, as the predominating element of danger in typhoid fever. It has been claimed that parenchymatous degeneration of the heart, kidneys, and other organs was the direct result of prolonged high temperature, and the chief energy of therapeusis was expended upon this hydra-headed monster. This idea was indeed sustained by, if it did not originate in, the marvellous success of the cold-bath treatment, which Brand, of Stettin, brought before the profession in Germany, and which was adopted, after some modification, by Liebermeister, the high-priest at the altar of antipyresis, as well as by Juergensen, Ziemssen, and others.

The history of this special subject is indeed instructive, inasmuch as it illustrates how surely bedside experience will, sooner or later, demolish the most stately structures erected by theoretical reasoning. Brand never claimed that his bath treatment was chiefly directed against the high temperature. On the contrary, this was a secondary object with him. Liebermeister's criticism ("Handbook of General Therapeutics," William Wood & Co., 1885) is at once its best exposition and the highest encomium of Brand's method. On page 15 he says: "The work of Brand, which was published in 1861, ranks high above the level of the publications of the professional hydropathists of to-day. Still the author occupies pretty much the ground of Priessnitz. The pre-eminent importance of abstraction of heat is not sufficiently recognized, the main action of water is more that of stimulation," etc. Now, I propose to show that the stand-point of Brand is correct to-day, and that it is sustained by the most incontrovertible evidence of experimental study, seconded by clinical experience gathered from carefully recorded data. A few days ago I heard a faithful adherent of drug medication remark that it is singular how antipyretics are falling into disuse. Thinking men are indeed beginning to ask themselves the question: Has the introduction of these powerful antipyretics reduced the mortality of typhoid fever? Two years ago I answered this question in the New York Academy of Medicine, affirmatively, but I stated my belief that the small improvement was attributable to the comfort afforded the patient more than to the removal of danger from high temperature. To-day, after an exhaustive review of the whole subject, I am prepared to agree with Brand, that the only advantage from antipyretic medication seems to be that the patient is able to die with a nearly normal temperature. The fact that the statistics of private and hospital practice show a mortality reaching beyond twenty-four per cent. since the introduction and abundant use of antipyrin and its substitutes, proves their inadequacy. And the fact becomes more glaring when the statistics of the cold-water treatment reveal the astounding reduction of mortality to 3.9 per cent. We have reached a point in the study of this subject, so wrought with deepest interest, when it is our solemn duty to pause, weigh the reasons of this enormous difference in the mortality, and to ascertain if it may not be reduced. The purpose of this effort is to establish the fact that this mortality may be reduced by adopting the cold-bath treatment, and that it may even be reduced, as Brand has reduced it, to one per cent.! Those who, like myself, have personally witnessed the fatality of typhoid fever in our city, may, as I once did, shrug their shoulders in doubt. But if you will follow me in a brief analysis of the reasons for the faith that is in me, I hope to convince you that this is not a chimera, but a substantial fact based upon the most reliable clinical data.

Brand offers the statistics of 19,017 carefully gathered cases of typhoid fever (*Deutsche Med. Wochensch.*, 1887), which demonstrate that under the general influence of all kinds of cold-bath treatment, without, however, its strict enforcement, the mortality has been reduced from 21.8 per cent. to 7.8 per cent. But this is not all. As I have said in a recent paper read before the New York County Medical Society, Brand has obtained, from twenty-three German and French distinctly designated sources, the reports of 5,573 cases, statistical evidence which has not yet and cannot be controverted, and by which it is clearly shown that the cold-bath treatment originally recommended by him has reduced the mortality to 3.9 per cent. The latter, however, still contains many imperfectly managed cases. Eliminating these, the number treated strictly by Juergensen, Vogel, Brand, and others, up to January, 1887, amounted to 1,223 cases, of which twelve died, a

[1] Read before the Medical Society of the State of New York, February 6, 1889.

mortality of one per cent. And yet this is not all, for the most significant fact deducible from these statistics remains to be told. Not a single one of these twelve deaths occurred in any case that came under treatment before the fifth day.

Brand boldly asserts, on the strength of these 1,223 cases, of which he treated one-fourth in private practice, the remainder coming from Juergensen's hospital at Tübingen, Vogl's at Munich, and the military hospitals at Stralsund and Stettin, that all cases of typhoid fever coming under treatment before the fifth day should recover. Medical statistics are proverbially unreliable, but the exactness of the figures presented by Brand, in his able polemic in the *Deutsche Med. Wochenschrift* for 1887, cannot be doubted, nor the deductions gainsaid, because they are furnished from civil and military life, from university clinics and military hospitals, in which the cases were observed by competent and well-trained men.

Valuable as these statistics must be as an argument in favor of strict cold bathing, the results of the latter are better illustrated by some comparative statistics made by several clinical observers. For instance, the official records of the Second Prussian Army Corps, quoted by Brand, show that while, from 1849 to 1866, the mortality among 1,970 cases was 26.3 per cent., it was reduced, among 2,711 cases of strict cold-bath treatment, to 4.3 per cent. This enormous reduction is the more glaring when this mortality of 4.3 per cent. is compared to that of other armies; in the French army it was 32.2 per cent.; in the Italian, 28.6 per cent.; in the Austrian, 27.4 per cent.; and in the English, 23.8 per cent., during the same period. Indeed, so striking was the reduction of mortality wrought by this treatment in the German military hospitals, that the Prussian War Department deemed it incumbent upon itself to issue, on January 25, 1883, a circular to the medical service, in which it was urged that, inasmuch as the Brand treatment has been instrumental in reducing the mortality of typhoid fever in the various hospitals from twenty-five per cent. to eight per cent., "we are justified in expecting that, with an increased perfection and more general adoption of this treatment, it may become possible to save a still larger number of sick men."

The following table, which I have gathered with care to exclude all unreliable statistics, presents at a glance the comparative merits of the various methods of treatment.

Average Mortality under Various Methods of Treatment in Typhoid Fever.

Reporter.	Source.	Treatment.	Number of cases.	Percentage of mortality.
Brand.....	Various sources.....	Expectant.....	11,124	21.7
Delafield...	New York Hospital, 1878–83.	Mixed expectant....	1,305	24 66
Brand.....	Various sources.....	All kinds of cold baths.	19,017	7.8
Tripier, Bouveret, and Teissier.	Red Cross Hospital, Lyons: 1866–77.....	Expectant.....	229	26.2
	1873–81.....	Intermediate.....	629	16.5
	1882–87.....	Exclusive cold baths in severe cases.	376	6.9
	1887.....	Strict cold bathing..	139	5.0
Vogl	Military Hospital, Munich: 1841–68.....	Without water, expectant (?).	5,484	20.7
	1868–81.....	Intermedia e, with water.	2,841	12.2
	1875–81 (Second Division).	Baths and antipyretics.	702	7.6
	1880.....	Strict cold baths....	428	2.7
	1882–87.....	Strict cold baths....	141	3.5
	1882–87 (Second Division).	Increasing baths and abolition of antipyretics.	144	4.1
Ziemssen...	Tübingen University Clinic for 1877–87.....	Graduated cold baths and antipyretics.	2,000	9.6
Naunyn....	Königsberg University Clinic.	Strict cold baths....	145	6.9
Brand.....	Collected from various sources.	Strict cold baths ...	2,198	1.7
Brand.....	Same cases, omitting those not treated before the fifth day.	Strict cold baths....	2,150	0.0

The above figures astounded me when I sought them out, and I trust they will impress the lesson they teach indelibly upon your minds.

But I do not ask you to accept this statistical evidence alone, although you will doubtless concede that never in the history of medicine have statistics of such magnitude, from such reliable and diversified sources, been brought to bear upon a question of therapeutics.

Let us divest ourselves of the empirical influence of mere figures which, it has been said, may be marshalled in any cause to prove anything, and study the reason why the cold bath treatment of typhoid fever is superior to the antipyretic expectant plan.

In the first place, the idea that high temperature is the chief determining cause of fatality in typhoid fever must now be abandoned. The sooner we cut loose from this bugbear the better for suffering humanity. I am glad that Dr. Burt has taken strong ground on this subject. Rather than enter upon an elaborate discussion of the present status of the question, I will refer you to the clear and sagacious review of the pathology of fever by Professor Welch, of Johns Hopkins University, in his Cartwright Lectures last spring. Study these lectures carefully, and you will find a cautious, painstaking weighing of all the evidence bearing upon the lethal influence of heat elevation in fever, sustained by experimental and clinical data that must be convincing to any unbiased mind. He says, in summing up (THE MEDICAL RECORD, April 28, 1888): "We find that animals may be kept at high febrile temperature for at least three weeks without manifesting any serious symptoms. The only functional disturbances which could be attributed directly to the influence of the elevated temperature were increased frequency of the respiration and quickened pulse. No definite relation could be established between the variations of arterial tension which occur in fever and the height of the temperature. Although the experiments narrated showed that prolonged high temperature is an element in the causation of fatty degeneration of the heart, they also indicated that other factors, such as infection, are concerned in the production of the lesion. Moreover, experimental evidence was found in support of clinical facts, showing that this alteration may exist without serious interference with the functions of the heart, so that the conclusion seems justifiable that failure of the heart's power, in fever, is *less* an effect of high temperature than of other concomitant conditions. The lessened perspiration, the renal disorders, and the digestive disturbances (with the possible exception of constipation), are referable also chiefly to other causes than the increased temperature. Both experimental and clinical observations strongly support the view, now widely accepted, that the disturbances of the sensorium, which constitute so prominent a part of the group of so-called typhoid symptoms, are dependent in a far higher degree upon infection or intoxication than upon the heightened temperature. Although no attempt was made to analyze in detail the clinical evidence relating to the effects of high temperature, attention was called to the fact that the absence of all serious symptoms in many cases of relapsing fever, and in the so-called aseptic fever, in spite of prolonged high temperature, strongly support the conclusions derived from the experimental study of the effects of heat upon man and animals. Even in fevers, such as typhoid fever and pneumonia, where the height of the temperature is undoubtedly a most important index of the severity of the disease, there exists no such parallelism between the temperature and the nature and severity of the other symptoms, as we should expect if these symptoms were caused by the increased heat of the body."

I might offer you many clinical observations on this point, but two of these, from men whom you all know and honor, will suffice. In the discussion of a paper on antipyretics which I had the honor to read before the Section on Practice of the New York Academy of Medicine, the lamented Dr. Wesley Carpenter said that, "With regard to heart failure and degeneration of the muscular fibres of the heart, I had an opportunity, in connection with the pathological department of Bellevue Hospital, to ex-

amine microscopically the cardiac muscle in a sufficient number of cases to make it quite evident that it did not occur with the frequency one might be led to expect from reading the writings of the German observers."

Dr. A. L. Loomis said on the same occasion, "He was not certain, for he had been in the line of observations similar to Dr. Carpenter, that failure of the heart is due to parenchymatous degeneration, of which we have at times heard so much, and it had seemed to him to be due to failure in nervous supply as much as to muscular changes."

This is clear evidence from two pathologists and clinicians, which I might corroborate by other native and foreign testimony. Since it may be now regarded as an established fact that high temperature, minus infection, does not produce those serious degenerations formerly ascribed to it, we must seek in the infective process, and the ptomaïne-intoxication resulting from it, those deleterious effects upon the vital organs which undermine the system, and eventually cause death in typhoid fever.

The cold bath treatment yields the most triumphant results in combating these very effects of the infective and toxic agencies, with whose true entity we have not yet been brought face to face. It has been clearly demonstrated by numerous trustworthy observers, that the reflex stimulus aroused by the shock to the extensive peripheral nerve-endings so energizes the nerve-centres which furnish innervation for circulation, respiration, digestion, tissue formation, and excretion, that the system is enabled to tide over the dangers which would ensue from failure of these functions. This is the effect of cold bathing in a nutshell; the simple cooling effect on the blood occupies a secondary, though not unimportant, office.

The fact, as shown by Winternitz, Quinquand, and others, is that cold baths actually increase oxidation in health, and that while the skin is cooled and the blood-vessels contracted, the deeper structures are slightly increased in temperature and their vessels dilated. As the opposite condition, viz., dilatation of the arteries and superficial vessels, evidenced by the dicrotic pulse and loss of elasticity and contraction of the vessels, with diminution of the blood-pressure in the inner structures, are manifestations of the fever, the effect of the cold bath appears primarily to be directed against these manifestations, as has been demonstrated by Winternitz's sphygmographic investigations. The vivifying effect upon the nerve centres referred to produces a vigorous cardiac action, which is evinced by the slower and more regular pulse and an improved tension of the vessels; it improves the appetite and digestion, enabling us to enforce a more perfect nutrition; it deepens and slows the respiration, preventing stasis of bronchial secretions, and obviating pulmonary complications; all the secretions are enhanced; the patient is refreshed and invigorated, and fights the battle for life with all chances in his favor. How different is the aspect of the case under the expectant treatment, and how different is the effect of pure antipyretic medication! The temperature may indeed be reduced, but the stimulating effect upon the nerve-centres and secretion, except on the perspiration, is absent. Vinay (*Lyon Médical*, 1888), who has made some creditable investigations on the subject, tells us that the antipyrin does not relieve the delirium, which is in accordance with my own observation; it does not, like the cold bath, increase the flow of urine, by which noxious elements are eliminated. Vinay has confirmed Vogl's observation, that there was a rapid gain of weight after cold baths had reduced the fever.

Kairin, resorcin, and antipyrin diminish the excretion of urea and nitrogen; hence they diminish the excretion of the materies morbi through the kidneys, while baths increase it. The liver, in patients dying after treatment by antipyrin, is from 6 to 12.50 grammes heavier than in those dying after cold baths. Indeed, there is an entire absence of effect upon the circulation after antipyrin, an effect which is marked after the cold bath.

Briefly stated, cold baths are antifebrile remedies, while antipyretics are simply antithermic. Hence the superiority of the former over treatment by antipyretic medication. A mixed treatment is advocated by Liebermeister and Ziemssen. The latter, who is one of the staunchest defenders of the cold bath (not, however, as an antipyretic alone), regards the gradually lowered bath as better adapted to the exigencies of private and civil practice, while he concedes that the results of Vogl, and others, in military practice leave nothing to be desired. Liebermeister insists upon the cold bath as an antipyretic to produce remissions, and orders quinine to render these more enduring. Naunyn, on the other hand, uses a modified and more temperate bathing, rejecting all antipyretic medication.

The statistics of these different methods have been presented to you, and I have now added as briefly as possible the reasons why the results are more favorable in the cold bath treatment first suggested by Brand in 1861. The latter is thus demonstrated to be the ideal treatment for typhoid fever, and that, whenever a deviation is made from it, Juergensen's opinion, given at the Congress in London, is sustained, that "whenever he has attempted to deviate from the rigorous cold water treatment, he was compelled to return to it in order to obtain the best results." This then is the standard for our guidance. It is to be carried out as follows: Whenever the temperature reaches over 103° F. in the rectum, the patient is placed in a bath of 65° F. A half bath of this temperature, with affusions three or five degrees lower, is sometimes used. This is to be repeated every three hours, so long as temperature is not reduced below 103° F.; and the patient is to remain fifteen minutes each time. Patient should be gently rubbed while in the bath; when he is removed from it, he should be wrapped in a coarse linen sheet, the extremities dried and wrapped in a blanket, and a stimulant may be administered. In extreme cases of muttering delirium, or when there is decided adynamia, a stimulating bath should be administered, even if the temperature is below 103° F. This consists of a half bath in warm water with cold affusion. A wet compress should be kept over the abdomen constantly when patient is in bed. Judgment must be exercised to adapt the baths to the condition of the patient and stage of the disease. The Ziemssen bath, which may be used when the patient, his friends, or the doctor is timid, consists of submerging the patient into a partial bath, about 9° F. or 10° F. below his temperature, whenever the latter reaches 103° F. in the rectum. While two assistants gently play water over him and rub him, cold water is added gradually near the feet, until its temperature is lowered to 68° F. He remains altogether twenty to thirty minutes, or until there is decided chilliness and chattering of the teeth. (Simple pallor of the skin and smallness of the pulse do not indicate removal.) He is now removed and wrapped in a dry sheet. The bath is repeated as often as the temperature reaches 103° F. This bath also requires judgment, as does every valuable remedial measure. The clinical picture of a case of typhoid fever treated by cold bath, as given by Brand and Ziemssen, and as I have personally observed, indicates that the whole aspect of the case is changed; the patient is bright, cheerful, eats well, sleeps well, all his functions are properly performed, and what is most important, complications are prevented. Even disease of the intestinal glands does not go beyond infiltration, according to Brand, if the case be treated early.

Ziemssen and Vogl furnish from personal experience a description of the beneficial effect of cold baths upon themselves, when they suffered from typhoid fever. Vogl gives us a similar experience.

We must not be deterred by timidity from rigorously executing the plan of three-hourly bathing so long as the temperature is 103° in the rectum, or when the sensorium is deeply depressed with a lower temperature. Even sleep should not prevent resort to the thermometer and bath, if needed. The object of this treatment, it must

be understood, is not to subdue the temperature, but to vivify and energize the vital organs, and thus insure a vigorous resistance to the toxic influences arising from the infective processes. This is the great aim to be kept steadily before us.

In presenting this apparently heroic treatment to the reconsideration of the profession, I am aware that there are serious objections to its general adoption, which seem almost insurmountable. The profession must first be educated to abandon the policy of expectancy, whose aim it is to allow the fever to pursue its own course:

1. The annoyance to the patient is not in accordance with the expectant plan, whose object it is to avoid all disturbance of the patient for remedial purposes. So long as we had only an inefficient, if not injurious, medicinal treatment, it was wise to avoid disturbing sleep. But, in a severe case of typhoid fever, it is as important to disturb sleep when the rise of temperature indicates the necessity, as it is in opium-poisoning when stupor supervenes. Indeed, the treatment is somewhat analogous, inasmuch as the object is to arouse the nerve-centres, and keep them aroused (though not continuously as in the latter), until the toxæmia has passed away.

2. The nurses and friends of the patient will be reluctant to adopt so active a measure. If the physician is convinced that he is right, he must insist upon his directions being followed.

3. The idea that the reduction of temperature is the leading object of the cold bath, and the much greater facility of accomplishing this object by antipyrin and antifebrin, may deter many from adopting the former. The fallacy of this course has been demonstrated.

4. Timid persons may be alarmed by the patient's pallor, small pulse, and complaints of chilliness while in the cold bath. But if properly administered, with chafing of the body and limbs, these effects will be counteracted to some extent. Reaction after removal will soon reassure the attendant, and embolden him to order a regular repetition.

5. A slovenly application of the bath, or the substitution of some other method—packing, sponging, sprinkling, etc.—will fail and cause discouragement. It must be remembered this is not *cold bathing*. A small experience, personal or from hearsay, which may have been unfavorable in one, two, or several cases, will deter some from adopting the energetic cold bathing. An intelligent hospital physician told me yesterday that he was discouraged from the cold-bath treatment by witnessing, while an interne in one of our hospitals, the death of a patient after being placed on a Kibbé cot, wrapped in a sheet, and *sprinkled with ice-water* for a considerable time. This method is not recommended by any author whom I have quoted, nor is it even to be compared to Currie's cold affusion, in which the stimulus of impingement of a large mass of cold water upon the surface favors rapid reaction, with its resultant stimulating effect on the nerve-centres.

The only modification of the general cold bath admissible is the stimulating affusion advised by Brand in cases threatening heart failure and delirium. This is a warm half-bath, with cold affusions over the head, chest, and back. (One important point is that the tub should always be brought to the bedside, to avoid unnecessary disturbance of the patient.)

6. The experience with cold bathing in England and America, where it has never found favor, has been too small to afford a proper estimate of its value. Dr. Bristowe, of St. Thomas' Hospital, opposes it; he says: "My personal experience in this treatment is not extensive, and for some years I have rarely, if ever, resorted to it. I have undoubtedly seen patients apparently benefited and making a good recovery. But I have never felt satisfied that the benefit was real."

Dr. Austin Flint published, in 1882, a lecture which exercised a potent influence in this country. He treated seventeen cases in Bellevue Hospital. "In a few cases the cold bath of 80° F., gradually reduced to 65°, was employed, but was discontinued on account of the inconvenience." His conclusion was that the antipyretic treatment neither increased nor diminished the mortality, which was four out of these seventeen cases.

Compare these statistics with those offered by Brand, and their utter insignificance for purposes of deduction is apparent. The prejudice existing against the cold-bath treatment is illustrated by a passage in "Struempell's Practice," a translation of which is now used as a text-book in the College of Physicians and Surgeons of New York. Struempell says, with his usual fairness: "There is at present no other single method of treating typhoid fever which has so numerous and evident advantages for the patient. We regard it as the duty of every physician who undertakes to treat a severe case of typhoid fever to try his best to have the bath employed." The editor and translator (a noted hospital physician) endeavors to neutralize this recommendation by stating that, "notwithstanding the high praise bestowed on the cold-bath treatment in Germany it has never become popular," and quotes Senator's statistics in support of his position. This is a serious misstatement, because Senator distinctly says (*Berl. Klin. Wochensch.*, 1885, p. 758): "If my essay has made the impression that I oppose cold baths, I must have expressed myself very badly."

7. One objection to the strict execution of Brand's method is doubtless the difficulty, if not impossibility, of treating patients before the fifth day. Indeed, this can only be done in military hospitals or in epidemics. Every suspicious case should be subjected to the bath. At any rate, the more nearly we approach the high standard of strict bathing, the more nearly we will approach the low mortality. Hence the earlier the baths are resorted to, the more strictly in accordance with the directions regarding their temperature and frequency, the more completely will the toxic processes be controlled and the mortality be reduced.

In conclusion, let me urge upon you to carefully weigh the evidence I have so imperfectly presented, and to seek in the literature of the past two years further information ere you decide to reject it and to continue the present fatal expectant-antipyretic course of treatment. As I have elsewhere said: The history of medicine does not present a parallel to the application of statistics for the elucidation of a question of therapeutics which Brand has presented and which I have amplified. The evidence is before us, clear and uncontrovertible. Upon our conscientious, unbiassed, and fearless judgment and action rests the weal or woe of those who commit their lives into our keeping.

47 East Sixtieth Street.

Triple Delivery by Cæsarean Section.—A curious case of triple birth took place last week in the Lariboisiére Hospital. A few days previously a poor woman entered the hospital in an advanced stage of pregnancy. The house-surgeon, after a careful examination, told her that in all probability she would give birth to three children. She had already four dependent on her. The surgeon left her in charge of the midwife, who was a very intelligent woman, as will be seen. The poor woman, evidently in the throes of labor, paced up and down the room, when suddenly she was seen to stagger and clutch at the window frame near which she was standing. The attendant rushed to her aid, but she was dead. The midwife having rapidly taken in the situation, and knowing that at the moment no doctor was at hand, decided on extracting herself the unborn children. The necessary instruments having been obtained, she boldly performed the operation, and brought into the world alive two girls and one boy. Great sympathy has been felt for them, and naturally great admiration for the heroic conduct of the *sage-femme*. The *Figaro* has opened a subscription list for the children.—Paris Correspondent of the *Medical Press*.

COMPOUND DEPRESSED FRACTURE AND LOSS OF SUBSTANCE OF THE FRONTAL BONE—ENCEPHALITIS—EPILEPSY—DEATH.[1]

By WILLIAM A. HUME, M.D.,

NEW YORK.

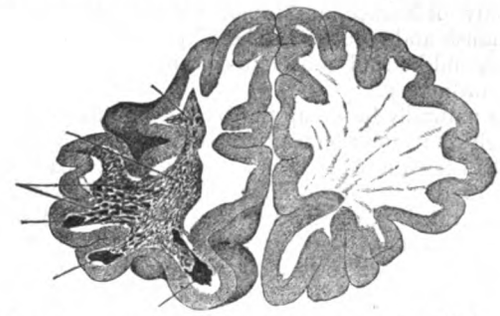
A MAN, aged thirty, was injured, May 10, 1886, by the explosion of a steam-drum over which he was working. The heavy pieces of metal struck his forehead, lacerated the skin, and fractured the frontal bone just above the orbits. The fractured bone was comminuted and depressed, the membranes of the brain were lacerated, as was also a portion of the cortical substance of the right frontal lobe, and the superior longitudinal sinus was opened, causing considerable hemorrhage. There was little or no shock, and the patient did not lose consciousness. The depressed fragments of bone were removed, and the projecting sharp edges of bone remaining intact were cut off with rongeur forceps. The loss of bone substance was considerable, the opening being nearly oval in shape and measuring, at widest points, seven centimetres laterally and three centimetres from below upward, situated somewhat obliquely on the right, a little above right orbit, from which point the lower border extended downward and to the left, crossing nasal eminence and involving the left orbital plate. The loss of bone substance was about equal on either side of the median line, so that both frontal lobes of the brain were exposed.

It may be of interest to refer to one or two points of treatment. The hemorrhage from the superior longitudinal sinus ceased spontaneously, probably from the formation of a thrombus within the sinus. The edges of skin wound were sutured together and union by first intention took place; but later, from pressure of brain, several ulcerations occurred along the line of union, the entire line gave way, and brain substance protruded through the wound, completely filling the opening in the bone, and projecting externally to the extent of from one to two centimetres. Over this hernia cerebri compresses and bandages were applied, and so, by gradual pressure, the brain substance was replaced. The skin wound healed by granulation. Notwithstanding the injury to the brain and to the membranes, the head symptoms during treatment were slight; the patient was delirious once, but only for a short time, and the temperature was not much above normal.

For several months the patient seemed to have made a complete recovery, and during that period the late Dr. Sands exhibited the case to the New York Surgical Society; but eight months after his injury the patient had an epileptic attack. The paroxysm was not severe, he was given bromide of potassium, ten grains three times a day; this quantity was gradually increased to twenty grains four times daily, but this amount producing "bromism" it was reduced to ten grains four times a day, and so continued. The epileptic attacks recurred at intervals of about eighteen months, not more than one attack at a time, and, as far as could be learned, were never limited to one side of the body; it is probable, however, that a local spasm first occurred, which very quickly became general, and all parts of the body were convulsed. The sense of smell was not affected, as might be supposed from location of brain lesion (to be described later), the olfactory nerve with its bulb being on either side of the longitudinal fissure, upon the under surface of each anterior lobe. The patient very seldom had headache, and never experienced an epileptic aura.

Ordinarily the skin covering the opening in the bone would advance and recede with each pulsation of the brain, but this was not so during a fit. I had an opportunity to observe the head-wound in one of his paroxysms. The skin was firmly drawn back through the bone opening, and the pulsations were no longer visible. This condition remained unchanged until the period of stupor, when the pulsations gradually became more and more pronounced, and, as consciousness returned, the skin projected a little beyond the level of the surrounding integument; its usual position was slightly sunken. It seems to me this fact is of value in support of the supposition that during an epileptic attack all but the initial phenomena result from vaso-motor disturbance, the cerebral arteries are contracted, and consequent anæmia of the brain ensues. We seldom have any indication, through so large an opening in the head, as to the changes in the intracranial blood-vessels during an epileptic attack. Küssmaul and Fenner have made observations to prove that during an attack of epilepsy the brain is anæmic, and it is a well-known fact that, both in animals and in man, loss of blood may be followed by convulsions. Three months before death the epileptic seizures increased in frequency and in violence, occurring about once a week with, often, two or three attacks at a time. The post-mortem examination of brain gave evidence of recent lesions to account for this. The intellect was not at all impaired until this time, when he had marked failure of memory. This was probably due to the frequency of the attacks. During the last week of life the fits were of nightly occurrence, and during the twenty-four hours preceding death the patient had sixty paroxysms. They occurred in such rapid succession that before he could recover consciousness from one fit another had commenced, and in this condition, "status epilepticus," he died, November 10, 1888. At autopsy the margins of bone were rounded off by absorption. Firm adhesions existed between the skin, membranes, and brain. The dura had not entirely reformed, and the anterior portion of the right frontal lobe was uncovered by it. The pia over the anterior portion of the right frontal lobe was entirely obliterated, and the anterior part of each frontal lobe was softened and disorganized, but particularly marked in right lobe.

I wish to express my indebtedness to Drs. E. C. Spitzka and N. E. Brill for their kindness in making post-mortem examination of the brain. Dr. Spitzka furnished the following notes as the result of such examination, and cross-section diagram showing the lesions in the right frontal lobe. The diagram shows the posterior face of a section anterior to the anterior end of the caudate nucleus.



"Over the anterior part of the convexity of the right frontal lobe, in a line running in the frontal plane, convex upward for four and a half centimetres, then dipping down acutely for two centimetres, the dura and pia, indistinguishably fused, appeared drawn into the cerebral substance. The line in question corresponds nearly to the course of the gyrus frontalis marginalis. At and below it the fused membranous investment was firmly united to a trabecular tissue, varying in thickness from one and a half to three millimetres, and covering a cavity of a linear direction following the line of attachment above described. Its dimensions could (from the ragged nature of this part of the specimen) not be accurately ascertained; it was irregular, and three spurs from it are exposed in the cross-section diagram accompanying. At its periphery the investing tissue merged gradually into the normal cortex of the neighboring gyri. The latter were puckered in toward the cicatrix, thus presenting a sort of radiating disposition

[1] Read at a meeting of the New York Pathological Society, December 12, 1888.

of these gyri, in great contrast with the normal disposition of the left lobe. The right frontal lobe, as a whole, appeared smaller than its fellow.

"On making sections at brief intervals, it was ascertained that pathological appearances visible to the naked eye extended through the white matter, under the affected area, nearly to the frontal plane of the anterior end of the caudate nucleus. While the cortex of the anterior ends of all three frontal gyri, and in part the subcortical white matter, appeared of normal consistency and color, aside from the area immediately involved in the cicatrix, a large part—what may be called the 'core' of these three gyri—was converted into a spongy tissue, of the kind which is described by authors as resulting from rarefying encephalitis. Its centre was a finely meshed tissue, compressible and very nearly like a sponge in texture and feel. In the axis of the middle frontal the meshes appear wider, more honeycombed. The process did not appear equally advanced in all parts. The meshes were firmest, and the walls of the cavity most sharply defined, in the middle frontal, and least so in the orbital transition of the lower frontal, where there was an area of very recent lacunar softening. As a rule, the meshes appeared to follow the course of the nerve-fibres. The second section revealed a distinct fibrillation in the course of a projecting end of two arcuate fasciculi, comparable to that observed in fracture of the normal hardened brain."

MEDICO-LEGAL CASES IN THE COURTS.

By HENRY A. RILEY, ESQ.,

NEW YORK.

The decisions regarding the inherent right of municipalities to pass regulations for the public health are becoming very numerous, and form a body of law approaching in importance that of any other department of jurisprudence. The tendency in the decisions is to restrict private rights and to show to boards of aldermen how practically uncontrolled are their powers in many directions. An ordinance hurriedly passed and without careful consideration may often work serious injustice and not be really demanded by regard for the public health. Whether this is true in the following instance it is impossible to tell at this great distance.

A city ordinance of Mobile, entitled an "ordinance to establish and regulate markets," provided that no fresh meat should be sold outside of certain markets established by the ordinance.

This naturally broke up the business of many persons, who felt that their constitutional rights to freedom of trade had been infringed, and an appeal was made to the courts to declare the ordinance unconstitutional. The tribunals ruled, however, that the ordinance did not exceed the powers of the city authorities. They did not, indeed, have power to prohibit entirely the trade in fresh meat, but they could regulate it, which involved the idea of prohibition in certain localities, provided it appeared that the public health demanded the concentration of the traffic. The important point in this decision, as in all others of the kind, is that practically there is no way to control city authorities in their determination of what the public health demands. This almost unlimited power is a matter of serious importance, though it cannot be said that it has thus far been exercised so as to work gross injustice.

It may be noted, however, that the courts will exercise control in cases where it is evident that some other reason than the public health prompts a municipal ordinance. Take, for instance, the law in this State, passed a few years since, prohibiting the manufacture of cigars in certain rooms of houses in New York City, and in certain houses entirely. The circumstances surrounding the origination of this law seemed to show to the courts that the endeavor to stamp out competition was the controlling motive of the law and not a regard for the public health. Taking this view, the courts held that the conceded power of the Legislature to regulate the cigar manufacture on real considerations of public health could not be used to aid a monopoly, and the law was declared unconstitutional. It would be of great value, as showing the drift of the law, if the decisions of the last few years on questions of public health were gathered together and properly collated.

The accident insurance companies desire the public to believe that they give ample protection against all injuries resulting from accident, yet claims are often refused payment which seem to come under this head.

The Fidelity and Casualty Company not long since defended a suit on a policy where the facts were as follows: A person insured against accidents was driving upon a public street, and his horse became frightened at some object and ran away without upsetting the carriage or coming in contact with anything, and was at length brought under control. The insured was apparently greatly endangered at the time and suffered so severely, either from fright or strain caused by his physical exertion in restraining the horse, that he died within an hour afterward. Under these circumstances, the court held that the death ensued from bodily injuries effected through "external, violent, and accidental means." Certainly there was an accident. The definition of "accident" usually assented to is an event happening without any human agency, or, if happening through human agency, an event which under the circumstances is unusual and not expected to the person to whom it happens. This definition exactly suits the facts here. Argument cannot be necessary to satisfy anyone that the injury happened by violent means. A well man suddenly meets a perilous emergency which taxes all his physical and mental strength, and his death is thereby caused in an hour. The greater question is whether the death was caused by external means. We have no doubt that it was. All the evidence that we have, more than the facts already stated, is that the insured became deathly sick, and after death a discoloration appeared on the surface of the body in the region of the heart. There is no pretence that the body bore any marks of contact with anything inflicting injury, or that it came in contact with any physical object during the time of the accident.

Our belief is that, on the facts legitimately before the court, the death was produced by a ruptured blood-vessel about the heart, and that such rupture was caused by the extraordinary physical and mental exertion which the deceased put forth to save his children and himself from injury. The jury decided that the policy of insurance must be paid, and this verdict was upheld by the appellate court.

The mode of execution by electricity which was recommended, not long since, by the Committee of the Medico-legal Society of this city, is as follows:

A stout table, covered with rubber-cloth, and having holes along its borders for binding, or a strong chair, should be procured. The prisoner, lying on his back, or sitting, should be firmly bound upon this table or in the chair. One electrode should be so inserted into the table or into the back of the chair that it will impinge upon the spine between the shoulders. The head should be secured by means of a sort of helmet fastened to the table or back of chair, and to this helmet the other pole should be so joined as to press firmly with its end upon the top of the head. We think a chair is preferable to a table. The rheophores can be led off to the dynamo through the floor or to another room, and the instrument for closing the circuit can be attached to the wall. The electrodes should be of metal, between one and four inches in diameter, covered with a thick layer of sponge or chamois-skin. The poles and the skin and hair at the points of contact should be wet with a warm aqueous solution of common salt. The hair should be cut short. Provision should be made for preventing any moisture reaching from one electrode to the other. A dynamo capable of generating an

electro-motive force of at least three thousand volts should be employed, and a current used with a potential between one thousand and one thousand five hundred volts, according to the resistance of the criminal. The alternating current should be made use of, with alteration not fewer than three hundred per second. Such a current, allowed to pass for from fifteen to thirty seconds, will insure death.

The mode of execution above described, or any other which may be devised, will not be made use of for some months at least, as the law prescribing the use of electricity only applies to murders committed after January 1, 1889. Many of the papers have, however, been imagining, with a grim humor, the strange scenes which may come to pass when the law is finally invoked. A writer in the New York *World*, for instance, suggests the following as a scientific sentence to be pronounced by the judge: "I therefore sentence you to be taken to Sing Sing prison, there to remain confined until ...., the .... day of ...., 188.., between the hours of .... and .... A.M., when you will be taken to a cell specially designed for that purpose, be forcibly seated in a properly insulated chair, with one semaphore placed upon the junction of your frontal and parietal sutures and the other just over your medulla oblongata and then and there made conductor for an alternating current of 1,800 volts intensity, from a dynamo constructed for that specific purpose, said current to pass through the ganglia and vasomotor centres of your cerebral tissue until you are dead, dead, dead; and may the Lord have mercy on what is left of you."

There was a recent case in Massachusetts where a manufacturer made use of a new chemical in dyeing cloth, and a purchaser was poisoned by handling it. In an action for damages it was held that the manufacturer was not liable, as the injury was the first known instance of harm resulting from the use of the mordant.

The Board of Health of Illinois a few months ago revoked the license of H. G. Wildman, a physician, the chief charge being that he had overstepped the ethics of the profession by advertising his success and skill in newspapers. Dr. Wildman then appealed the case to Governor Oglesby, and he rendered his opinion a few days since, reversing the decision of the Board of Health, and claiming that a physician should not be debarred from practice because he advertises what he can do and has done. Dr. Wildman expends over $40,000 yearly in advertising in papers all over the Union, and several of the Illinois papers went on his bond in the action. The decision has caused considerable comment in the West.

Danger in the Postage Stamp.—The *Sanitary News* calls attention to the fact that a postage stamp may in various ways convey contagion. One of the simplest and most plausible is that in which a postage stamp, partially attached to a letter to pay return postage, is sent by a person infected with some disease to another person. The disease is transferred in the first place to the adhesive stamp through the saliva, and in being attached to the letter by the receiver the poison may be transmitted to him in turn through the saliva. Another cause may be the infection of the stamp with disease germs. The stamp, having been exposed in a room where a diseased person lies, may become slightly moistened and thus retain the germ. That this is true can be proved very simply by a microscopical examination. We often see a person holding change for a moment in the mouth, probably not knowing that investigation has shown that disease germs can be carried by money. If one could see through what hands the money has passed they would hesitate before using such a third hand. Silver money is as bad as paper money, but while many would hesitate to hold a dirty bank-note in their mouth, they think that a silver piece, because bright, is apparently clean.

Progress of Medical Science.

Electrolysis in Angioma and Goitre.—Mr. John Duncan has recorded his experience in the treatment of nævi, cavernous angioma, pulsatile angioma, and goitre, by means of electrolysis. Many of the cases which he details were of extreme gravity, and had been rebellious to other treatment. His results in the angiomatous cases were uniformly successful (*The American Journal of the Medical Sciences*, January, 1889). He worked with a current of between forty and eighty milliampères, but considers that really a matter of small importance. A galvanometer is of no value in operations where the duration is determined by the palpable and visible effects produced. It is very different in cases in which we cannot see and feel the gradually increasing swelling, tension, and hardness. Here a means of measuring the current in operation is essential. Five to eight cells of large size and good electro-motor force are most convenient to work with. It is not necessary to use a large number of cells if both poles be introduced as they ought to be. The body is as good a conductor as acidulated water, if the resistance of the skin be avoided. He introduces both electrodes (insulated, so that the operation may be truly subcutaneous), but works chiefly with the negative pole. It is to be remembered that the effect is produced invariably by shrivelling up and destroying the vascular walls; and that coagulation of the blood is a matter of very secondary importance; therefore he keeps moving the negative pole about, and penetrating as many vessels with it as possible, because its destructive effect is more powerful and diffuse than that of the positive. He maintains it in one place just long enough to bring about a decided effect, and then changes to another. In these operations the process is essentially distinct from that by which Apostoli and others have produced their effects upon uterine tumors. However his results may be brought about, it is not by electrolysis proper, it is not by the decomposition of fluids and solids at the poles of the battery. It may be neurotic, or vascular, or trophic, or osmotic; it is not electrolytic, and to call it so is no doubt a misnomer. Mr. Duncan says he has not yet had sufficient experience to be able to define with precision the value of electrolysis in goitre, but he gives the results, so far as they have gone, of fourteen cases. Three are still under treatment, having been recently operated upon, and already showing beneficial results. One is a fibro-cystic, another a strongly marked exophthalmic, the third a vascular goitre, with considerable dyspnœa. Eleven remain, two or three having slight vascular and exophthalmic symptoms, others with slight dysphagia or dyspnœa, all of the vascular variety. Four of them it was impossible to trace. These cases were in the infirmary for only a day or two, and the records of their addresses have been imperfectly kept. In two cases, however, they returned for a second operation, having been benefited by the first. Of the others, six have been absolutely cured, and the seventh has the tumor still in no way changed by one operation. Mr. Duncan thinks that these results are very encouraging, and that with greater experience we will be able to operate with more confidence. The chief difficulties have hitherto laid in the manipulation of the needles, and our want of knowledge of the effects which might be produced on surrounding structures in so important a locality.

Restricting the Use of French.—The physicians of Alsace-Lorraine have been informed that henceforth they must write their prescriptions in German or Latin, and not in French, as has been their custom. This is, of course, in the line of the German policy to root out the use of the French language in the conquered provinces, and is a national sequence of the decree forbidding the use of French in the transactions of medical societies.

THE MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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CONSUMPTIVE TRAVELLERS.

WE have received a reprint of an article published in the *Australasian Medical Gazette* for November, 1888, by Mr. G. R. MacMullen, in which attention is directed to the dangers to which consumptives, seeking a more propitious climate, expose their healthy fellow-voyagers. This thought must often have occurred to many who have travelled with such patients; but, owing perhaps to a feeling of delicacy and a desire to avoid wounding the susceptibilities of the afflicted, it is seldom that the question is discussed openly.

The author, who is a layman, has apparently experienced that of which he writes, and expresses himself with decision, though withal as delicately as the subject will permit. He cites the case of a traveller going from London to Australia, who secures a berth in a cabin and finds that his companion for the voyage is one with well-marked phthisis. The state-room is probably very small, and there may be two, three, or four berths in it. The sick man will naturally have a considerable dread of ventilation, at least of such an amount of it as a healthy man would desire, and even if he has not, the ventilation of the state-room is at best by no means perfect. The well man will have a natural repugnance to insist on the greatest possible amount of ventilation when the carrying out of his wishes will subject his suffering companion to the real or fancied dangers of cold air or draughts. And even should he assert his undoubted right to a fair amount of fresh air in the cabin, he knows that in so doing he causes much physical or mental suffering to his already afflicted room-mate, and consequently what little pleasure he might have derived from the voyage, in the intervals of sea-sickness, is marred by his self-accusations of lack of consideration for the feelings of his room-mate.

But if this were all it would not be worth mention. It would be merely an occasion for mutual concessions which are demanded of every one who is thrown in the company of another, whether for life as man and wife, or for a brief period as fellow-travellers by land or water. All who believe in the contagiousness of tuberculosis will see in such an association a real danger to the healthy party, and one which may well cause him alarm. If phthisis is contagious, and who is there that doubts it, no more favorable conditions for the transmission of the disease could be found than those present in the case cited by Mr. MacMullen.

The remedy, of course, consists in isolation, or at least in the separation of the sick and the well, though it is difficult to say just how this should be accomplished. The author proposes that the medical officer of the ship should have the power to remove such patients to the hospital during the voyage. But this seems to be an unnecessary hardship, and one that should not be inflicted upon the sufferer if it were possible to avoid it. It might be feasible to put two persons having the same disease together in one state-room, or to give each one a cabin by himself. It is, at all events, a subject that is worthy of consideration, and doubtless some means might be devised whereby the rights of the healthy could be preserved without the infliction of physical or mental distress upon the suffering consumptive.

THE COLD-BATH TREATMENT OF TYPHOID FEVER.

THE argument in behalf of the cold-bath treatment of typhoid fever, made before the State Medical Society, and which is presented in full in this issue, moves us to a consideration of this oft-discussed theme.

The numerical method is open to many fallacies, and may be quoted in any cause. But it strikes us that when upward of thirty thousand cases are gathered from many and various sources, civil and military, we must give heed to the deduction from them.

If Dr. Baruch succeeds in arousing the profession to a realization of the fatality of typhoid fever in our midst, and in directing attention to the success of the cold-bath treatment, which, for obvious reasons, has not yet obtained firm footing, the outcome may be valuable.

Certain it is that we cannot dispute the important deductions from the comparative statistics cited, nor should we allow preconceived notions to deter us from utilizing them.

It will be difficult to persuade the profession, which has been so long under the dominion of the *laissez-faire* policy, to adopt the heroic method of cold bathing. There seems, however, in the points made by Dr. Baruch, sufficient ground to enlist our careful reconsideration of the whole subject. The most important of these seems to us the emphasis placed upon the object of the cold bath being anti-febrile rather than merely antithermic, inasmuch as its action is chiefly directed toward the neutralization of the febrile toxæmia due to the typhoid process. The secondary position assigned to elevated temperature as a lethal factor, may be amply sustained by recent clinical observations; for instance, Glasser has shown that among two hundred fatal cases only fifteen had manifested high temperatures during life. Lowering temperatures is not a curative measure.

The chief obstacle to the adoption of the cold-bath treatment will be the difficulty of convincing the physician that the small pulse, pallid surface, and marked chilliness, which patients manifest in the bath, are not harbingers of danger and death from heart-failure and collapse. That this fear is not as well founded, and that these symptoms of pseudo-collapse may be, to a great extent, obviated by energetic friction in, and rapid drying after, the bath, we are assured by trustworthy observers, all of whom agree that the cold bath is a true heart-tonic. Besides Brand, such clinicians as Liebermeister, Jacksch, Flehne, Strumpell, Rossbach, Heubne, Juergensen,

Bamberger, and others, have expressed, at the Congress for Internal Medicine in 1885, almost unanimously, the opinion that, until we find a specific curative agent for typhoid fever, that treatment is to be preferred which is capable of most successfully diminishing or removing the effect of the morbific agencies, and that this is most surely accomplished by the cold bath.

THE LATE PROFESSOR DALTON.

THE death of Dr. Dalton removes another of the eminent medical men of this city and country. Though not an old man at the time of his death, his scientific reputation was achieved so early that he has been classed among the pioneers and fathers of American medical science. Dalton's "Physiology" is a text-book familiar to thousands of American physicians. At the time of its publication, and for years after, it was the best English work on this subject, and its influence upon medical teaching and thought has been very great.

Professor Dalton's best work was embodied in his "Physiology." His only other important contribution to the medical sciences was his "Topographical Anatomy of the Brain."

Professor Dalton combined in a happy manner the scientific spirit with literary skill and aptitude for teaching. He was popular as a lecturer, most interesting as a writer, and was admired and esteemed as a man. Professor Dalton was, with all this, a man of the world, observant, shrewd, and wise. These traits gave him still greater influence in his educational work, and in the management of the College of which he was president at the time of his death.

OLIVER WENDELL HOLMES' LOVE FOR HIS BOOKS.

DR. HOLMES has recently presented his library of works on medicine to the Boston Medical Library Association, of which he was once the President, thereby, as it were, breaking the last strand of the cord that bound him to the profession of medicine. It is hard to break up old associations and to sever ties of many years' duration, and we can well appreciate the reluctance that he must have felt in thus parting with his silent friends. It is now several years since he retired from the medical profession, yet it is only within the past month that he has relaxed his hold on the books which were the companions of his professional life. "A scholar should not be in a hurry to part with his books," Dr. Holmes once said, but his love for his fellows has conquered his love for his books, and he has placed the latter where they may benefit to the fullest extent those who follow him in the paths of medicine.

In his address on the occasion of the presentation of these well-beloved volumes, after reviewing the better books of the library and alluding to the private library that a practitioner should keep, Dr. Holmes continued his address by saying: "These books are dear to me; a twig from some one of my nerves runs to every one of them, and they mark the progress of my study and the stepping-stones of my professional life. If any of them can be to others as they have been to me, I am willing to part with them, even if they are such old and beloved companions."

After listening to these words, his hearers must have felt that this was indeed the breaking of the last link in the chain that bound the speaker to medicine, but they doubtless felt, as do we all, that they could never let him go, that they must hold him in spite of himself, and that they would ever, in his own words, "claim him, keep him, call him brother still."

MEDICAL WAR IN ST. LOUIS.

THERE is reported to be a small tempest in the medical circles of St. Louis. The cyclonic focus is the St. Louis Medical Society, an ancient and respected medical organization. At its annual meeting in January, so accounts run, there was a contest for the office of president between the conservative portion, and a number of aggressive members more or less connected with the *Weekly Medical Review* of that city. The latter gentlemen had been accused of using the *Review* for advertising purposes, its first page being decorated with a list of associate editors, each with his own specialty or generalty printed after his name. So bald an announcement of one's devotion to a single line of practice was severely condemned as unethical by the party of the Extreme Right. The fight in the Medical Society resulted in the election of the conservative candidate, whereupon the defeated faction has withdrawn and organized a duplicate St. Louis Medical Society. War now reigns, therefore, and the question which is the real, original society may have to be taken to the courts. It has, unfortunately, already reached the daily press.

We tender our respectful condolences to the brethren of St. Louis. Quarrels are always sad affairs, yet they excite a large degree of human interest, especially doctors' quarrels; for they show up the elemental nature of man in a way not brought out by the ordinary incidents of life. If our St. Louis brethren are bound to fight, we trust they will make it interesting, and will give and take the blows in a straightforward and hearty fashion. As for the merits of the controversy, it seems very unwise to have attempted any censorship of the alleged advertising methods adopted by those connected with the *Medical Review*. The practice complained of is one that concerns questions of good taste and expediency, rather than ethics. Those who follow so-called "business" methods in attempting to get a knowledge of their medical wares before the public, had best be treated simply as persons lacking in wisdom and sense of propriety. Censorious criticism and persecution will do no good. On the other hand, the recalcitrant advertisers who have gone off and organized a second society, have shown a greater desire to achieve personal success than to promote the harmony and best interests of the profession. Their legal title to be called the St. Louis Medical Society is of the most questionable kind.

A DEATH UNDER CHLOROFORM occurred a short time ago in the Cleveland City Hospital. The patient was about to be operated upon for enucleation of the eye, and considerable difficulty was experienced in bringing him under the influence of the anæsthetic. Just before the completion of the operation he recovered consciousness, and a few more whiffs of chloroform were given, when the heart ceased beating. Every effort was made to resuscitate him, but without success. At the autopsy the right heart was found dilated, although the valves were normal.

News of the Week.

THE MIDDLETON GOLDSMITH LECTURE for 1889 will be delivered before the New York Pathological Society by Reginald H. Fitz, M.D., Shattuck Professor of Pathology in the Harvard Medical School, Boston, at the New York Academy of Medicine, 12 West Thirty-first Street, on Saturday, February 16, at 8.30 P.M. Subject: "Acute Pancreatitis, with an Especial Consideration of Pancreatic Hemorrhage, Hemorrhagic Pancreatitis, and Subperitoneal Fat Necrosis." Members of the profession are cordially invited.

THE LANGENBECK MEMORIAL FUND AND THE NEW YORK SOCIETY OF GERMAN PHYSICIANS.—In the issue of THE MEDICAL RECORD of February 2d, page 131, in a paragraph commencing, "The largest medical society in Germany," etc., it is said that Professor Virchow announced that the New York Medical Society had contributed 1,000 marks to the Langenbeck Memorial Fund. It should read, the New York Medical Society of German Physicians.

POST-GRADUATE HOSPITAL EXTENSION.—Besides purchasing the property occupied during the past five years, Nos. 224 to 230 East Twentieth Street, at $60,000, the property adjoining has been leased for ten years, for the purpose of increasing the babies' wards of the hospital. The former ward for infants will be converted into a lying-in ward.

PUBLIC MEDICAL LIBRARIES.—In the proceedings at the reception given to Dr. Oliver Wendell Holmes, on the occasion of his presenting his library to the Boston Medical Library Association, Dr. R. M. Hodges, President of the Association, gave some facts regarding the public medical libraries of this country. "First," he said, "in point of time is the library of the Pennsylvania Hospital, founded in 1760; second, that of the College of Physicians in Philadelphia, founded in 1788; third, the New York Hospital Library, in 1796, etc. Of course the library of the Surgeon-General's office has surpassed in size all these, having a large annual appropriation and a magnificent librarian. Next in rank comes the library of the College of Physicians; next, that of the Academy of Physicians, and our library comes fourth in rank. After that come the Medical Department of the Public Library of Boston, and the New York Hospital Library. In other words, although the youngest of these seven libraries, ours has already passed three of them. We have nearly 20,000 volumes."

A SPECIFIC FOR CHOLERA.—Dr. Löwenthal thinks that he has found in salol a specific for cholera.

THE JANITOR AND A STUDENT of the Baltimore College of Physicians and Surgeons were convicted of breaking open a vault at Bay View Asylum, for the stealing of cadavers, and sentenced to thirty days in jail.

WE LEARN THAT DR. J. B. HAMILTON, who had accepted the position of editor of *The Journal of the American Medical Association*, after a brief experience in the editorial chair, has sent in his resignation, and will continue to hold his position as Surgeon-General of the Marine Hospital Service.

DR. NATHANIEL R. MOSELEY died of heart disease at his rooms in this city, on February 9th. He was about sixty years of age, was graduated at the Pennsylvania University in 1853, and was a member of the County Medical Society, and the Harlem Medical Association. During the War of the Rebellion he was an emergency surgeon in the navy.

DR. R. W. TURNIPSEED, of Hampton, Ga., and ex-member of the Legislature, died suddenly at Atlanta, Ga., on February 10th.

THE CALIFORNIA STATE MEDICAL SOCIETY meets on April 17th.

AN AGGRESSIVE SOCIETY.—We learn from the daily press that the Erie County Medical Society has decided to proceed against all persons practising in Buffalo who are not members of one of the county medical societies. The movement is directly aimed against the various institutes which have been established in the city within the last few years. There is also some talk of proceedings against the Christian science and faith cure practitioners. It is intimated that an effort will be made to change the existing law so that they can be reached. As they give no medicine, they cannot be prosecuted for illegal practice, but the Chairman of the Board of Censors thinks they can be reached another way. He says: "I believe those Christian scientists have an institute here and give diplomas, and obtain much money for them. I think they can be prosecuted under the law regulating colleges, or for obtaining money under false pretences."

UNIVERSITY OF PENNSYLVANIA.—Dr. J. William White has been elected Professor of Clinical Surgery; Dr. John Guiteras, Professor of Pathology and Morbid Anatomy.

DR. JOHANN WAGNER, Emeritus Professor of Internal Medicine at the University of Buda-Pesth, died on January 1st, aged seventy-nine years.

THE GERMAN CONGRESS OF INTERNAL MEDICINE will be held this year in Wiesbaden, on April 15th to 18th, under the presidency of Professor v. Liebermeister. Among the subjects to be discussed are "The Nature and Treatment of Gout" and "The Treatment of Ileus."

THE TRUSTEES OF THE JOHNS HOPKINS HOSPITAL have decided to formally open the hospital on May 1st, and they have confided its organization to President Gilman, of the University. We understand that for one year, at least, President Gilman will reside in the hospital, and exercise a close personal supervision over its executive management.

DR. LEOPOLD WITTELSHÖFER, founder of the *Wiener Medizinische Wochenschrift*, died on January 8th, at the age of seventy-one years. He had withdrawn from the management of the journal only about a week before his death.

DR. NATHAN R. GORTER has sued Robert Garrett for $30,000, for medical attendance on Mr. Garrett when he was abroad, in 1887. Dr. Gorter accompanied the party as far as Berlin, where in May, 1888, he left Mr. Garrett, receiving at this time $1,000 on account.

ARTIFICIAL COCAINE.—Professor Liebreich announces in the *Therapeutische Monatshefte* that he has succeeded in producing cocaine by synthesis.

Reviews and Notices of Books.

THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE RECTUM. By WILLIAM ALLINGHAM, F.R.C.S., England. Edited and Revised by HERBERT WILLIAM ALLINGHAM, Fellow of the Royal College of Surgeons of England. Fifth edition. London: J. A. Churchill. 1888.

MR. ALLINGHAM, JR., has very successfully edited and revised the treatise of his father under the direction of the latter. Several entirely new chapters have been added by the Editor, among which may be mentioned Incontinence of Fæces, Excision of the Rectum, and Inguinal and Lumbar Colotomy. The volume as a whole maintains its previous high reputation as a leading authority on the subject.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. Consisting of Original Treatises and of Complete Reproductions in English of Books and Monographs selected from the latest literature of foreign countries. Published monthly.

FOR nearly a score of years past it has been the aim of Messrs. William Wood & Company to supply the medical profession with books at a more moderate price than has obtained among publishers generally, and this without lowering the standard of manufacture of their works. The first outcome of these endeavors on their part was the well known series of books published by them under the general title of "Wood's Library of Standard Medical Authors," unquestionably the most popular and widely sold books of medical literature ever published in any language. After reaching the full number of one hundred volumes, this series has been recently discontinued.

While publishing these books, each of which was a more or less complete and comprehensive treatise upon the subjects of which it treated, they became aware, as indeed, they had before appreciated, that there was a large class of medical literature published abroad and offered by American authors which was practically out of the reach of the profession in this country. Numbers of excellent original papers were continually being written which were too large for journal articles and too small to make profitable books, and which consequently were never published at all, and great numbers of such publications in paper covers abroad, met the same fate in this country for the same reasons. They determined, therefore, as they say in their prospectus of this series, to issue periodically, at monthly intervals, collections of the most valuable of these papers, and basing their estimates upon the remarkable favor accredited to "Wood's Library" they have begun the publication of "Wood's Medical and Surgical Monographs" at a price which casts into the shade their previous efforts in the direction of moderate priced books.

The first volume of this year is before us and is an exceedingly handsome specimen of book-making, clear, legible type, handsome paper, with wide margins and an exceedingly neat cover of heavy leatherette paper. It contains in full the following interesting monographs:

"The Pedigree of Disease," by Jonathan Hutchinson, F.R.S.; "Common Diseases of the Skin," by Robert M. Simon, M.D., and "Varieties and Treatment of Bronchitis," by Dr. Ferrand.

The first named is very proper as an introduction to this series, and should be read by every physician and surgeon, and the following two are of unusual practical value to the general practitioner of medicine.

We notice that the titles of the selections for the succeeding number of the series are printed on the inside of the cover, and we find proposed for the February issue:

"Gonorrhœal Infection in Women," by Dr. W. J. Sinclair; on "Giddiness," by Dr. Thomas Grainger Stewart, and a "Critical Study of the Clinical Value of Albuminuria in Bright's Disease."

The selections for these two issues are remarkably good, and with so wide a range for the collection of valuable material never before published it is fair to assume that the giving and taking of these good things will be mutually appreciated by publishers and readers.

TRANSACTIONS OF THE NINTH ANNUAL MEETING OF THE LARYNGOLOGICAL ASSOCIATION, held in the City of New York, May 26, 27, and 28, 1887.

THE ninth edition of these Transactions is at hand, and we find it bristling with articles of interest to the Laryngologist as well as to the general practitioner.

Nothing adds to the value of scientific research so much as the free and full expression of unbiassed opinion, by which alone disparities of ideas may be reconciled, and this is exemplified in the highest degree in this volume. The article being from the pens of many of our most eminent Laryngologists, with elaborate discussions on each topic, make up a valuable contribution to the history of these diseases.

It would be invidious to attempt a criticism of each separate paper, suffice it to say that almost the entire field of laryngology and rhinology is brought into review, as well as the most approved methods of treatment. Many new instrumental devices are also shown, among which may be mentioned: electric nasal saw and powder-blower, a hæmostatic clamp, and a visiting bag.

THE PRESCRIPTION, THERAPEUTICALLY, PHARMACEUTICALLY, AND GRAMMATICALLY CONSIDERED. By OTTO A. WALL, M.D., Ph.G., Professor of Materia Medica and Botany in the St. Louis College of Pharmacy, Professor of Pharmacy in the Missouri Medical College, Member of the Committee of Revision of the Pharmacopœia of the United States, etc. St. Louis, Mo.: The Aug. Gast Bank Note and Litho. Co. 1888.

THIS is the largest and most complete work on the prescription and prescription writing that has ever appeared in our country. It is, indeed, too large to put in the hands of a student ignorant of Latin (if a faulty preliminary education can ever be corrected in that way), but it is a useful book of reference and contains many practical points in the way of elegance in prescribing, something that physicians are at times prone to ignore. It also treats of weights and measures, the metric as well as the apothecaries', the determination of doses for children, rules for abbreviating, and, indeed, of everything pertaining to accurate and graceful prescription writing.

OPHTHALMIC SURGERY. By ROBERT BRUDENELL CARTER, F.R.C.S., Ophthalmic Surgeon to St. George's Hospital and to the National Hospital for the Paralyzed and Epileptic; and WILLIAM ADAMS FROST, F.R.C.S., Assistant Ophthalmic Surgeon to St. George's Hospital; Assistant Surgeon to the Royal Westminster Ophthalmic Hospital. Illustrated with a chromograph and ninety-one engravings. Pp. 554, 12mo. Philadelphia: Lea Brothers & Co.

THIS is one of a series of clinical manuals for practitioners and students of medicine, but, unlike many so-called "handy-books," it is a compact and complete text-book. The names of the authors are well known to readers of ophthalmic literature; but, at the same time, there is little that is new, and less that is sensational, in this little book. The style of writing is terse and fresh, forcible and piquant, conversational rather than didactic. All through the book there are evidences of a master-hand in surgery as in diction.

The usual preliminary chapters on the anatomy and physiology of the eyeball, and on the examination of the organ, are followed by a careful description of the affections of the tissues, and viewed from before backward. One of the longest chapters is that on the Lenticular System, though but little space is devoted to the revived method of extraction of cataract without iridectomy, now

quite the fashion in France and in the United States. The chapter on Injuries is, perhaps, the most useful for the general practitioner; while that on Amblyopia and Amaurosis will afford pleasure to the connoisseur in ophthalmology, by dint of the peculiar views of the senior author. Mr. Carter states that some writers (obviously referring to his own countrymen) imply that iritis must be either "syphilitic," or "rheumatic;" while, on the other hand, he strongly inveighs against labelling every iritis with the diathesis in which it happens to be found; the danger in the first instance consists in treating only two systemic conditions, while in the second the dangers and the delicate management of iritis are forgotten in hunting about for a proper treatment of the diathesis.

It is with regret that one sees Couper's lachrymal probes carefully put in a wood-cut; these probes are made after Otis' bulbous bougies, and are very large. In 1878 the reviewer saw these large bulbous probes repeatedly used at Moorfields Hospital, with almost always a destruction of the bony lachrymal canal. The region in which they were devised for use by Otis possesses a very different environment from that for which Mrs. Couper devised them.

Fig. 14, p. 84, ticketed Noyes' Needleholder, will be readily recognized as portraying the instrument of Sands. In Fig. 39, p. 233, illustrating the corneal flap in cataract extraction, the letters "A" and "C" should be transposed, else the reader, following the engraving, will enter the cataract-knife at the nasal side, and deliver it at the temporal side of the eyeball. Fig. 45, p. 242, and its context, emphasize the von Graefe bandage, in use twenty years ago; while the light compress and strip of plaster now in vogue in this country are alluded to as a revised novelty of twenty-five years past.

The few pages devoted to sympathetic neurosis and sympathetic ophthalmitis should be read with care.

In the chapter devoted to refractive errors, Mr. Frost has given the following concise rules as to the use of atropine for paralyzing the accommodation: "In the case of adolescents, and adults under thirty, this is, as a rule, unnecessary in myopia, but desirable in hypermetropia and astigmatism; in patients over thirty a mydriatic is only necessary in astigmatism, or when there is any reason to suspect spasm of the ciliary muscle, or when there is great want of control over the muscle, as shown by variations in the answers given in subjective tests.

The usual formulæ seen in English ophthalmic guides find their useful place at the end of this manual.

TRANSACTIONS OF THE AMERICAN OTOLOGICAL SOCIETY. TWENTY-FIRST ANNUAL MEETING, JULY 17, 1888; including the Special Meeting of the Society held at Washington, September 18, 1888. Pp. 256. Published for the Society by the Mercury Publishing Co., New Bedford, Mass.

THESE Transactions contain a large amount of otological literature by American writers.

FEEST BUNDEL aan FRANCISCUS CORNELIS DONDERS, op den 27sten Mei, 1888, aangeboden. Door Het Nederlandsch Tijdschrift voor GeneesKunde. 8vo, pp. 546. Amsterdam: F. Van Roosen. 1888.

THIS is a series of forty essays, chiefly on ophthalmic topics, under the editorial leadership of Snellen, read on the occasion of the seventieth birthday of Professor Donders, of Utrecht. The day was devoted to a jubilee in honor of the well-known Donders, of Utrecht. Engelmann, of Utrecht, read a paper on the "Microspectrometer;" Westhoff, of Amsterdam, on "Erythropsia in the Lensless Eye;" Huysdam, of Utrecht, on "Hysterical Mutism;" Snellen, of Utrecht, on "Myosis in Cases of Sclerotomy Performed for Glaucoma;" Landolt, of Paris, read a valuable paper in French on "Verbal Blindness," one case having total right hemiopia, and another having left hemianopsia, with right hemiplegia, the verbal blindness in the latter case being absolute, and accompanied by a loss of mental vision of objects and of memory. Roosenburg, of Gravenhage, contributed two cases of tubercular peritonitis treated by laparotomy. Dooremaal, of Gravenhage, contributed a case of luxation of the eyeball, taking for his thesis the historic case of Dr. Sullivan, of New Hampshire, published in THE MEDICAL RECORD of August 27, 1887.

This jubilee-book of Donders' seventieth birthday is illustrated with seventeen lithographs and colored sketches, illustrating various papers; it marks an era not only in the individual life of the "Master," but also in the progress of the science to which his life has been devoted.

Obituary.

JOHN C. DALTON, M.D.,

NEW YORK.

DR. JOHN CALL DALTON died at his home, in this city, on February 12th, at the age of sixty-four years. He had been sick for some time, suffering chiefly from kidney trouble. An operation made necessary by his complaint was performed recently, but without the result desired.

Dr. Dalton was born in Chelmsford, Mass., February 2, 1825. He evinced a preference for the study of medicine at an early age, and devoted himself assiduously to it in Harvard University, from which institution he was graduated as an M.D. in 1847. He developed a strong liking for literary work, coupled with a taste for physiology, and in 1851 he attained considerable celebrity by an original essay on the "Corpus Luteum," which was written in competition for the annual prize offered by the American Medical Association. The reputation acquired by this effort led to Dr. Dalton's appointment as Professor in the Medical Department of the University of Buffalo, where he remained until 1854, when he accepted a similar professorship in the Vermont Medical College at Woodstock. It is related of him that he was the first professor in the country to teach physiology with illustrations by vivisection.

From Vermont Dr. Dalton removed to the Long Island College Hospital, in 1859, where he remained for two years as Professor of Physiology. He had previously delivered a course of lectures on physiology in the College of Physicians and Surgeons in this city, and in 1855 he was elected Professor of Physiology in the last-named college, a post which he continued to hold until 1883, when he resigned it to accept the presidency of the institution. Dr. Dalton went South with the Seventh Regiment of this city in 1861, and served during the war. In the summer of 1861 he was appointed Brigade Surgeon of Volunteers. He resigned from army service in March, 1864.

Dr. Dalton returned to New York in 1864, and re-entered upon his professional duties in the College of Physicians and Surgeons. He was elected a member of the National Academy of Sciences soon after his return to this city. He at once took an active part in physiological discussions, both at society meetings and in med ical publications. He became a member of the New York Academy of Medicine, and served as vice-president of that institution from 1874 to 1877 inclusive. He was also a member of the State Medical Society, the New York Pathological Society, the Medical Journal Association, the Medical Society of New York, and several other organizations.

Among Dr. Dalton's most important physiological publications may be named the following, which were printed in book form: "A Treatise on Human Physiology," "A Treatise on Physiology and Hygiene for Schools, Fam ilies, and Colleges," "The Experimental Method of Med icine," "Doctrines of the Circulation," and "Topographical Anatomy of the Brain." Dr. Dalton's contributions to the medical and surgical magazines were very numerous.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-third Annual Meeting, held in the City Hall, Albany, February 5, 6, and 7, 1889.

(Continued from p. 160.)

SECTION IN SURGERY.

TUESDAY, FEBRUARY 5TH.

DR. BERNARD BARTOW, of Buffalo, read a paper entitled

THE DIAGNOSTIC VALUE OF SPINAL ROTATION.

He called attention to the fact that spinal rotation took place in the early stages of spondylitis, because at first the patient voluntarily put himself in a position in which he found the pain less. Irritation was at the bottom of the change in the spine then. Scoliosis was a modified form of rachitis, and really represented a vertebral irritation.

The rotary malposition in spondylitis during the stage when it was due simply to a muscular contraction, and before it became shared in by the bones and ligaments, could be treated successfully. This was not to be done by self-suspension or a plaster-of-Paris jacket put on while so suspended. His method was to make a plaster-of-Paris mould of the body in its existing state, to remodel it to what the normal shape *should have made it*, while still soft, then to make from this in plaster a trunk which represented the normal figure of the patient, and finally on this to model a leather strait-jacket which, when put on the patient, forced him to keep his body in its own normal attitude or form. The patient was to be kept recumbent for the first few days, but after that could go about freely wearing the leather strait-jacket.

A light scoliosis might also be treated thus if we added massage, diet, and suitable exercises. As the strength returned the leather jacket could be punched with holes. This reduced its weight and increased its elasticity. The leather jacket did away with the old plan of having a succession of plaster jackets, as softening, remodelling, and tighter lacing were always possible.

DR. L. A. WEIGEL, of Rochester, had observed the rotary deformity early in spondylitis. If it were really due to irritation, would not simply the recumbent position be as good and better treatment than the jacket?

DR. A. M. PHELPS objected to classing Pott's disease of the spine along with lateral curvature or scoliosis. The latter he regarded as incurable. For the former fixation and absolutely continuous immobilization were necessary, best obtained by the plaster-of-Paris jacket put on with the patient suspended. It could be kept on six months, or even from one to four years. After it was removed there would be need of a light, strong, and flexible brace, and nothing answered better for this than the wooden corset made of thin strips of wood moulded to the body in the shape desired.

DR. BARTOW replied that his leather corset did give complete and continuous fixation, and all the more because it threw the spine into its natural position. Vertical suspension did not correct rotary curvature, but true scoliosis could be cured by the leather jacket.

RECENT ADVANCES IN THE TREATMENT OF HERNIA.

DR. W. B. DE GARMO, in a paper with this title, treated particularly non-strangulated herniæ and recent advances in their treatment. It had become necessary to recognize: *1.* The great variety of forms in which such herniæ might occur. *2.* The variety of operations which different prominent surgeons had put forward, of which each surgeon used only that one which he himself had described to the profession. *3.* The need of selecting from the different methods the ones which best suited particular and varying cases. The steps in the operation were equally a matter of more or less dispute. Take the question as to whether we should open the sac. Bryant, of London, had said that opening it increased the risk of operation by four times. Others disagreed here. Now if the hernia was small we could assume that there were no changes inside the sac, and return it with the sac unopened. If of any size and not recent, it was to be assumed that adhesions were present. Masses of omentum were to be removed even if reducible. Instead of applying a single ligature after amputation, it was better to spread out the stump of omentum and tie the vessels separately. The stitching of the stump of the sac into the canal was apt to be followed by return of the hernia. The canal must be freed of it. For recent small hernia torsion of the sac was a good measure. If as large as an egg, and easily separated, McCuen's operation was best. For very large hernia Barker's operation was better.

Dr. Pilcher, of Brooklyn; Dr. W. Hailes, Jr., of Albany; Dr. J. P. Creveling, of Auburn; and Dr. Phelps, of Buffalo, discussed details of the treatment.

DR. T. R. POOLEY, of New York, read a paper entitled

OPERATIVE TREATMENT OF AN HYPEROSTOSIS OF THE EXTERNAL AUDITORY CANAL.

The removal of bone in this difficult situation could be done to advantage by drills and trephines operated by the dental engine. A still better means was the electro-osteotome, invented by Dr. J. M. Roberts, of New York, armed with a chuck carrying saws, knives, drills, burrs, and hollow trephines of various sizes. It could be held in the fingers, and was even more delicate than the dental engine. Either of these instruments made the operation less tedious, and avoided the danger of injury of deeper parts by slipping of instruments and pressure when gouges, files, galvano-cautery, or écraseur were used. To remove swelling in the soft tissues following the operation he had found hot water in repeated applications best; soft rubber tubes and catheters only increased it.

DR. C. C. RICE, of New York, urged the importance of avoiding the absorption of septic material. Plugging the meatus was to be avoided. An open wound and constant irrigation gave the best results.

DR. POMEROY thought cases should be selected for operation with great caution. Only those where pain got to be intolerable should be interfered with surgically, seeing the sea of troubles which might follow operation. Iodine and other such drugs were useless. In large exostoses the growth could be quite easily removed by paring it away with a chisel. Inflammation of the middle ear might follow from shock in neighboring parts, even from operation on the inferior turbinated bones.

Dr. Rice and Dr. O. B. Douglas, of New York, had not seen ear affections follow operation on the inferior turbinated except when the posterior nares were plugged; and Dr. J. O. Roe, of Rochester, explained that this only followed when the Eustachian canal was incidentally plugged, hemorrhage into the middle ear sometimes being the direct result.

DR. F. H. POTTER, of Buffalo, read a paper entitled

MEMBRANOUS RHINITIS.

About two per cent. of all his cases of acute rhinitis had been cases of membranous rhinitis. The disease was without assignable cause, and presented no systemic disturbances of any moment. It began as a severe catarrhal rhinitis, but by the third day the discharge became a white tenacious coating, and if forcibly removed the denuded surface was tender and bled easily. It resembled the membrane of diphtheria. Cocaine had no contractile effect till recovery began after a course of three weeks. Other drugs were either harmful or only gave relief or irritation, as when bromides were given. Dry pellets of cotton kept in for five minutes gave slight relief. The drift of opinion was toward a broader conception of the nature of local disease; they were now considered rather as expressions of some constitutional state.

Dr. Rice, of New York, agreed as to the speaker's last conclusion. He had noticed gout, rheumatism, or hay fever in his own cases of membranous rhinitis; also any local causes predisposing to catarrh.

Dr. Roe, of Rochester, believed that all fibrinous exudates into the air-passages and pulmonary structures had a constitutional cause, and one of a similar sort, namely, a pathogenic germ. The result varied with the many various states of individual condition, the location of the infection, and the sort and violence of the germ. The sort of feeding-ground furnished the germ by locally diseased conditions, such as chronic inflammations, did much to determine the effect it would have.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, February 7, 1889.

A. Jacobi, M.D., afterward A. L. Loomis, M.D., President, in the Chair.

NOMINATIONS FOR TRUSTEE, UNEXPIRED TERM.

Drs. Laurence Johnson and J. E. Janvrin were nominated.

Dr. Castle reported that Dr. Edward Herrick had been made Chairman of the Board of Trustees.

A bust of Dr. Alexander H. Stevens was presented by his daughter, and accepted with thanks.

ADDRESS OF DR. A. JACOBI.

In reviewing the progress of the Academy during his term of office, Dr. Jacobi spoke of the excellent work done by the numerous sections, and named in particular those on the Practice of Medicine, on Surgery, on Obstetrics, and on Pediatrics. For some reason, however, the efficiency of a few sections had remained inferior to that of the rest. The purpose of the Academy was the prevention and cure of disease. "If there be any two sections which are expected to thrive under the shadow of the flag in which that shibboleth is inscribed, it is those of Hygiene and Public Health, and of Materia Medica and therapeutics." A number of the meetings of the former had been marked successes, but the interest in it displayed by the medical profession was not as great as it should be. "How many subjects for its consideration are there? More than bones in the body. Food in infancy, childhood, and advanced age; feeding in hospitals—that means also our hospitals; in prisons—that means our prisons, with the question of work or enforced idleness; drinking-water and its management, with Croton water and Hackensack water supply, Quaker Bridge dam and aqueduct; physical development and work, with the questions involving the bodily and mental future of the Republic, those of male and female and children's factory work, and that of the management of our public schools. No greater service can be rendered the community by any scientific section or society than by offering the knowledge represented in the topics here suggested. Utilizing the summer for the beneficent work of seaside and mountain sanitaria, thus co-operating with the spirit displayed by St. John's Guild, the Children's Aid Society, and others. The questions of sewage and ground-water, the influence of which is but little understood because of the temptation to exaggerate their importance in certain directions; the prevention of infectious diseases, including the topics of disinfection, of vaccination for variola, hydrophobia, and other scourges, and the reduction of mortality in those cases and epidemics after they have started.

"The section on Materia Medica and Therapeutics has not yet been a success. Why that should have been so the members of the section themselves will perhaps not be able to answer. Is it because some of the other sections, particularly those of Internal Medicine, of Pediatrics, and also of Surgery, are in a position to draw on the subjects legitimately belonging to it, but also to them? Or because the name of the section was not, as it might have been, that of 'Therapeutics, including Materia Medica?' Therapeutics—the art of healing—is, as it must be, the final development and aim of all medical service; the crowning edifice of all research is the health and welfare of man, is to prevent and heal disease. Fortunately, sound therapeutics is no longer a pious wish, for it is in therapeutics that the very greatest advance which medicine has made in the last generation has taken place, both through laboratory experimentation and clinical experience. These two—laboratory experimentation and clinical experience—have to co-operate for the elucidation of new facts. The former means experiments on animals, the latter, observation of the sick; but let me say to those who are inclined to be reckless in their enthusiasm, not to experiment on the sick or well. Neither science, nor humanity, nor law permits the exposure of human beings entrusted in their helplessness to public charge to the experimental influence of mineral, vegetable, or parasitic poisons under any consideration or for any purpose, be this even an alleged progress in our knowledge. I speak on this topic with feeling, for it is but a few weeks since I was expected to attend a demonstration of babies who had been wilfully exposed to presumed scarlet-fever poison. But to experiments on animals we owe most of our knowledge on the so-called poisons, on heart stimulants, and on wound infection. Billroth's and Weber's researches in this line, together with the labors of the pharmacologists, have created all that has been called, or is connected with, Listerism, and given rise to all the wonderful achievements of modern surgery. The latter, it is true, has amply repaid for what it received from medicine and pharmacology by the new life it instilled into internal medicine, by local treatment of internal diseases, and those of the nose, larynx, rectum, uterus, bladder, and other organs formerly equally inaccessible to successful management. All of these topics give sufficient work to any number of section meetings, both special and therapeutical.

"In reference to the latter, there are a few facts known to all good observers and therapeutists. For instance: (1) Nature destroys with the same indifference that it heals. It requires assistance. A fractured bone, an empyema, a perityphlitic abscess, a stone in the bladder, a uræmic convulsion, even an attack of asthma, demand interference. Even self-limited diseases require watching and treatment. Diphtheria runs six weeks if quite mild, but a shorter time, it is true, if you let a bad case die by expectant non-treatment; pertussis a few months, if undisturbed in its attacks on the lungs, with the sequelæ of pneumonia or phthisis. Nasal diphtheria is surely fatal unless you disinfect the diseased surfaces. (2) Medication has become more simple and more effective. The big bottles, with contents of one or more dozen ingredients, have made room for shorter prescriptions and alkaloids. At the same time it has become more effective. (3) It has become more local in the same degree that the diagnosis has become so. A diphtheritic stomatitis and pharyngitis demands its chlorate of potassium and tincture of chloride of iron in small but very frequent doses, which develop the general with the local effect. (4) The organic relation of medicaments and morbid changes have been studied more closely; the potassium salts are, therefore, preferable to those of sodium in cases of gouty deposits. (5) Elimination of medicinal agents has been studied. Digitalis is eliminated but slowly, and thus may give rise to cumulative effects, while spartein being both readily absorbed and quickly eliminated, yields a speedy effect and exhibits no cumulation. Iodide of potassium ointments made with fat require days before iodine is found in the urine, while those prepared with lanolin exhibit it within a few hours. (6) It is acknowledged as a principle that the diseased individual must be treated, and not the name of a disease. Those who ask you, How do you treat diphtheria, pneumonia, or typhoid? are getting fewer in number; though it is not quite impossible to hear the pen busy when a

prescription fiend begins to dictate commonplace long-windedness. Thus your medication must often be subsidized with remedies of a different nature, viz., those which stimulate the nervous system by inspiring hope and confidence. Temple dreams, whipping, music, consolation, the sweet breath of young girls, reading and conversation, dancing and reunions, fæces of man and animals and other filth, change of scene, amulets, Hahnemannism potentialities, and other faith-cures, prove to what extent imponderable influences have been brought to bear on the impressible, with more or less imaginary or casual result; and also to what extent a well-informed and thoughtful medical man, interested in the welfare of his patient, can bring to bear on him—mental and moral influences. (7) Nothing is easier than to substantiate the fact that the greatest advances have been made in therapeutics. The last twenty years have not only changed our methods of administration in avoiding the whole plant and adopting only what is needed for special purposes, after investigating the physiological effects of the several ingredients, but also a large number of new substances has been added to the list, and some are most important. It is true iron, mercury, opium, and iodides are left on their old exalted seats, but even the iodides and bromides are not seventy years old. A few instances will show the changes which have taken place. In my own time capital operations were performed without chloroform. But that is perhaps too long ago in our fast-living century to be mentioned at all. But it was as late as November, 1869, that I experimented before the County Medical Society, in the presince of John C. Peters and others, with the first ounce of chloral hydrate which ever reached the country. The salicylates are but fifteen years old, and the large number of alkaloids too many to be mentioned. The derivatives of methan, such as paraldehyd, nitro glycerin, lanolin; those of benzol, as antifebrin, salol, sacchrin, hypnon, naphthalin, and naphthol; the organic bases, cocain, chinolin, kairin, antipyrin, thallin, pyridin, iodol, spartein; the terpenes and camphors of many sorts, such as terebene and terpin, menthol and helenin, have but a brief but victorious existence. (8) Other remedies and methods have been developed in large numbers and rapid succession. Scientific dietetics, gymnastics, hydro- and aerotherapeutics and massage are quite modern; climatotherapeutics has a national society to take charge of it; electrotherapeutics has become one of the household gods of a medical office. Thirty years ago I could not have procured an interrupted current in the city but for the kind services of an enthusiastic Centre Street telegraphic electrician; to-day the improvements in faradic, galvanic, and static apparatuses follow each other rapidly, and the sellers underbid each other.

"The interest awakened by so many new discoveries, inventions, and methods may well occupy a society or section founded for the advancement of therapeutics. It can enhance rapid motion or cut down its exuberances; for progress consists as well in the critical estimation of old, as in the discovery of new, facts. A great many questions are to be answered in regard even to many remedies which appear to have been well studied; for instance, in regard to the *modus operandi* inherent in a number of agents which differ much according to the method of their administration.

"I wish I had the time and capacity of thoroughly going into this subject. If I have but convinced you that I at least believe in therapeutics in general, and also in medicaments in particular, that therapeutics has become scientific since it has been based on physiology, experimentation, and indication, I am satisfied. That, however, does not mean that I believe in prescription-writing as an end, or in *vade mecums*, or all medicine in the vest pocket; or in copying other men's prescriptions for other men's cases from the records of the apothecaries; but it does mean that I look upon therapeutics, including materia medica, as an essential in the medical education of both the student and practitioner, and feel confident that an academic section will confer both honor upon itself and benefit on the profession by nursing it. In the face of all this you find many who shrug their shoulders at internal medicine and therapeutics. Indeed, laymen, and some in the profession who ought to be laymen, punish them with contempt. This is because they have no knowledge of the effect of medicines, of the morbid processes requiring, and the intellectual work of the physician controlling, them. It is particularly the valuation of the latter they are without. It is not the fault of internal medicine that there too few experts after all. It is its complication and difficulty that demands ripe years, hard work, and a keen and powerful intellect before the great physician is made. It is fortunate for mankind that at least modern operative surgery, as based upon the advance of pharmacology, has become an art, and the success of most operations depends upon a few well understood facts and methods easily obtained by an average capacity. Thus a man of thirty, with a well-balanced mind may merit and obtain a great reputation as an eminent operator. Have you heard of a great general practitioner of that age?"

Before concluding his address, Dr. Jacobi paid a glowing tribute to his prececessor and successor in office, and introduced Dr. A. L. Loomis, whose address will be found on page 141.

At the conclusion of his address Dr. Loomis introduced ex-president DR. FORDYCE BARKER, who said he had great difficulty in giving adequate expression to the pleasure he found in being present this evening and in listening to the very able addresses, for it forced upon his mind in strong contrast the difference between now and ten years ago, when he had the honor of giving a valedictory, as illustrating the wonderful growth and improvement in every respect of the Academy. At the close of his remarks Dr. Barker moved a vote of thanks to the retiring President, Dr. Jacobi, for the devotion, zeal, and perfection with which he had performed the duties of presiding officer. The motion was carried unanimously.

DR. LOOMIS said he would expect the members of the sections to do what they could toward making the general meetings interesting, especially by their presence.

Adjourned.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, December 12, 1888.

W. P. NORTHRUP, M[illegible], PRESIDENT, IN THE CHAIR.

DR. JOHN S. THACHER presented a heart showing

TRICUSPID STENOSIS.

It was removed from the body of a woman, twenty-nine years of age, who died in St. Luke's Hospital. She had been married six years, and had had two miscarriages but no living children. There was no history of rheumatism, but the patient had had scarlet fever in childhood. She had had leucorrhœa for a number of years. There was no history of syphilis. Five months ago she had some swelling of the feet, and of the left leg and thigh, and three weeks ago the abdomen began to enlarge, and the patient suffered from dyspnœa. The face was congested, but there was no pain about the heart, no palpitation, and no headache. The urine had a specific gravity of 1.010, and contained a trace of albumin, some hyaline and granular casts, and leucocytes. Examination of the heart showed the apex-beat in the fifth intercostal space, four and one-half inches to the left of the median line. The heart's action was irregular. A loud murmur was heard at the apex, but loudest over the mitral area; it was thought to be presystolic, and was not transmitted. There was, also a loud systolic murmur at the base, loudest over the aortic area, and transmitted upward. A few sibilant and sonorous râles were present. The abdominal cavity contained fluid.

Autopsy.—The pericardial, pleural, and peritoneal cavities contained fluid. The left lobe of the liver was twice

the size of the right, and the latter showed some cicatrices, was slightly hobnailed, and seemed to be cirrhotic. The kidneys showed many scars, probably from infarcts; the cortex was thickened, somewhat pale, and the markings were a little indistinct. There was stenosis of the mitral, aortic, and tricuspid valves. The tricuspid would not admit two fingers, was smooth, circular, and slightly funnel-shaped. The mitral admitted one finger, and was very similar in appearance to the tricuspid. The aortic valve would not admit one finger, was nearly circular in shape, and nodular.

Dr. Thacher also presented another specimen, showing a

CONSTRICTION OF THE INTESTINE,

produced by an inflammatory adhesion connecting two portions of the mesentery. The condition was discovered only at the autopsy, as the constriction was not sufficiently tight to give rise to any symptoms during life.

Dr. John C. Peters referred to the frequency of the occurrence of valvular disease of the heart after scarlet fever, which was much greater than was commonly supposed. He had seen many such cases.

Dr. Herman J. Boldt presented a monstrosity consisting of

A DOUBLE-FACED HEAD, WITHOUT TRUNK OR EXTREMITIES.

The specimen was a mass which was expelled from the uterus of a woman, thirty-three years of age, immediately after the birth of her sixth child, and prior to the expulsion of the placenta. In its descent it appeared to the touch as another head, and it was believed by the midwife in attendance that a second child was about to be born. After the delivery of the mass and the placenta, which was unusually large, an examination showed that the child and the monster had membranes and placenta in common, but each had its umbilical cord. The cord from the child had a central attachment to the placenta, while that from the monster had a marginal attachment. The child was a normal one.

The specimen measured three and three-quarter inches in the long diameter, two and three-quarter inches in the transverse diameter, and three inches in the vertical diameter. The weight was not taken. On close inspection the monstrosity had the appearance of a head with two imperfectly developed faces. The faces were on the inferior aspect of the mass, their crowns pointing in opposite directions. In one face two slits were seen, and were thought to represent the seat of the eyes; also a small, pedunculated, fleshy growth, possibly a rudimentary nose. There was neither mouth nor ears. The other face showed one deep slit, oblique in direction, and a shallow sulcus as representatives of the eyes. The nose was a pedunculated piece of flesh, the size of a hazel-nut. The mouth was well marked, with an upper hare-lip and a well-developed lower lip. Starting just above the eyes was a growth of very fine hair, which was not present on the other face.

Examination by transmitted light showed the outlines of cartilaginous plates, which, it may be assumed, were destined to be two frontal and two parietal bones. These plates had dark spots, suggesting centres of ossification. The space between the upper margins of the plates included a greater part of the superior surface of the mass, and, especially in two places, the skin was very thin and transparent. The umbilical cord was on a plane midway between the faces, but a little to one side of a line drawn from nose to nose. In looking over the literature of monstrosities Dr. Boldt had been able to find no record of a similar case. It seemed evident that this one was a double-faced head without a trunk.

Dr. William A. Hume, presented some specimens illustrating a case (see p. 179) of

FRACTURE WITH LOSS OF SUBSTANCE OF THE FRONTAL BONE—ENCEPHALITIS—LATE EPILEPSY—DEATH.

Dr. Mendelson called attention to the appearance of the wound during an epileptic seizure, as described by Dr. Hume, as confirming the old theory of the causation of epilepsy formulated by Schroeder van der Kolk, namely, that the attacks are due to a spasm of the cerebral vessels. In this case both the absence of pulsation and the retraction of the skin covering the opening in the frontal bone clearly pointed to a diminution of the volume of the cranial contents, and the only conceivable way in which the cranial contents could, under the circumstances, be lessened would be by a diminution of the amount of fluid within the cranium, and the most obvious cause for this would lie in a spasm of the cerebral vessels. The case was also interesting from the location of the lesion in the frontal region—a region injury of which is not usually followed by signs of cortical irritation leading to epilepsy.

Dr. Hume said that the microscopical examination of the brain had not yet been completed, and it was possible that a degenerative process would be found extending back and involving the motor tracts. Still the epilepsy might have been simply reflex in character occasioned by the irritation from the extensive lesion in the anterior lobe.

Dr. Eugene Hodenpyl presented specimens of

CARCINOMA OF THE STOMACH AND SUPRARENAL CAPSULES.

In the stomach the lesion was at the pyloric extremity. The regions where the suprarenal bodies should be found were occupied by two masses of friable tissue, and there were no evidences whatever of the proper substance of the adrenals. Examination under the microscope showed the new growths to be alveolar carcinomata.

Dr. Hodenpyl also showed sections of the suprarenal bodies from a case of

ADDISON'S DISEASE.

The patient was a woman, twenty-four years of age, and was born in Ceylon of English parents. Her father was living and healthy. The mother died at the age of seventy-three years. The family, on both sides, were pronounced brunettes, and the mother, especially, had an unusually dark complexion. It was often noticed that during periods of illness, even of a trivial nature, the patient's skin became much browner than at other times. There was no history of tuberculosis. During infancy and up to the age of fifteen years the patient had always been healthy. At this time she had a severe attack of sickness, lasting one month, the nature of which is obscure. The father states that the trouble began in "a gathering in the forefinger," followed by severe constitutional symptoms, delirium, fever, etc. About five years ago the parents noticed that the patient was failing in health. She began to lose flesh, strength, and appetite. She became stupid and apathetic. Her skin gradually became darker in color. She also developed attacks characterized by intense headache, nausea, and vomiting, diarrhœa alternating with constipation, great pain and tenderness over the abdomen, and occasionally delirium, lasting three or four days. These attacks varied a good deal as regards duration and severity, but they were more frequent during the past two years. The patient was admitted into the hospital suffering from one of her "bilious attacks." She was exceedingly dull and apathetic, and could give no good account of herself. On physical examination the skin was seen to be of a very dark brown color. The mucous membranes were considerably pigmented. Examination of the heart and lungs gave negative results. Considerable pain and tenderness existed over the abdomen. The spleen was not enlarged. The urine contained a trace of albumin. Pulse, 90; respiration, 20; temperature, 100.2°. She had headache, nausea, vomiting, irregular bowels, and occasionally mild delirium. While in the hospital the patient's skin was at times of a decidedly browner hue than at others, and it varied from day to day, apparently without regard to her

general condition. She finally passed into the "typhoid state," the stupor developing into coma, and she died April 29, 1888.

Autopsy.—The body was well nourished, the rigor mortis well marked. The skin over the whole body, especially the lower half, was of a dark, chocolate-brown color, the nipples and labia being almost black. The mucous membrane of the mouth, nose, and vagina was pigmented. The left lung was moderately œdematous, the right, firmly adherent to the chest-wall and diaphragm, congested and œdematous. In the apex there was a single small calcified nodule. The bronchial glands were not enlarged. The heart was small, flabby, and the muscle pale; the mitral valve was slightly thickened. The stomach was normal. The small intestines contained a number of congested and pigmented areas. The large intestine was normal. The liver was adherent to the surrounding parts, being attached by numerous dense and firm adhesions; the color was dark, and the cut surface smooth. The spleen was of normal size, very firmly adherent, soft, and contained three very small calcified nodules. The pancreas was normal. The suprarenals of both sides were enlarged to about three times their normal size. They were of stony hardness, and the cut surface showed that the medullary portion had been entirely converted into a cheesy and calcareous mass, the cortical portion being replaced by a pale grayish, semi-translucent material. The kidneys were rather large and firm, and of dark color, with the capsule adherent in places. The cortex was not thickened, and the markings were fairly distinct. The mesenteric glands were not enlarged. The thyroid was rather small and dense. The thymus was large, and projected as far as the third rib. Lying on either side and behind the trachea were two or three enlarged cervical lymph nodes which were entirely converted into cheesy and calcific material. The brain was normal.

Microscopical examination: Sections from the suprarenals and cervical lymph nodes, when stained for tubercle bacilli, gave negative results, although the lesion was evidently a tubercular one in an advanced stage. In and around the blood-vessels of the kidney were collections of small spheroidal cells, and scattered about were masses of small round cells between the tubules. The spleen showed the lesions of congestion and hyperplasia. The liver was a little fatty. In the thyroid body, and principally around the periphery of the lobules, were here and there masses of small round cells, in places forming a zone of cells around a lobule; in other places they simply occurred as irregular masses. Moreover, there seemed to be an irregular infiltration of small cells into some of the lobules.

As regards the source of infection in this case, it is possible that the "gathering" in the finger might have been tubercular. The small round cells in the thyroid were very abundant. The speaker said that he had not made up his mind whether they were leucocytes or lymphoid cells. If they were the latter, the case would be an uncommon one, for lymphoid tissue was very seldom found in young people. In reply to a question whether tubercle bacilli had been found in Addison's disease, he said that Osler had discovered them in two cases, but that they are not ordinarily found in this disease.

Dr. J. C. Peters said that the first case of Addison's disease described in this country was presented at a meeting of this Society by Dr. John T. Metcalfe.

Dr. Henry N. Heineman, in response to a request to give a definition of the term "Addison's disease," after observing incidentally that Addison's disease seemed to be a much more common affection abroad than in this country, said that the affection is one in which certain phenomena, consisting in nervous symptoms and a pigmented skin, are associated with changes in the suprarenal bodies. These changes, however, are of the most varied character, and it is as yet impossible to give any exact definition of the disease, for the subject has not yet been sufficiently worked up to admit of such a definition.

Dr. John S. Ely presented two enormously enlarged

CYSTIC KIDNEYS

removed from a hog at the slaughter-house. There was hardly any kidney tissue remaining, the organs being made up almost entirely of cysts, which seemed to be retention-cysts. There was a very abundant growth of connective tissue.

Dr. Mendelson remarked that the specimens were interesting in connection with the question of gout in hogs. In a case of such gout described by him about a year ago, he had been able to show that this form bore a very close resemblance anatomically to the urate gout of man. The kidneys just presented showed that chronic interstitial nephritis—the "gouty kidney"—of human beings, one of the less obviously gouty lesions, was also represented in the hog. The speaker also dwelt upon the importance of the study of comparative pathology, and urged members, whenever possible, to bring specimens illustrating diseases of the lower animals.

Dr. Mary A. Dixon Jones presented a specimen of

INTRAMURAL MYOMA OF THE UTERUS,

removed from a patient forty-four years old; married twenty-four years; no children. The tumor lay low in the pelvis, and made considerable pressure upon the bladder and rectum. It commenced at the internal os, completely occluding the uterine canal. There was also a subperitoneal fibroid, the size of an infant's head. Both tumors were removed by suprapubic hysterectomy, the stump removed per vaginam, as in kolpo-hysterectomy. The operation was successful, but the patient afterward succumbed to an old kidney trouble, complicated with heart disease. The microscopical examination of the uterine appendages showed long-existing disease.

A second specimen was one of

FIBRO-CYSTIC TUMOR OF THE BROAD LIGAMENT.

The patient was forty-eight years old; married twice; no children. Menstruation began at fourteen, accompanied, as she said, by terrific pain, which year by year became more and more severe. The patient had to have recourse to morphine. For years she was treated for uterine disease, without results. Probably disease of the ovaries commenced in early menstrual life. The growth had been observed for eight or nine years. When she came under observation in May, 1888, it was about nine inches in diameter, and the lower part was tightly wedged into the pelvis, pushing the uterus to the right. She entered the Woman's Hospital of Brooklyn May 30, 1888, and the tumor was removed three days later. It had an immense pedicle, with a great predominance of fibrous tissue. The patient made an excellent recovery. Microscopical examination of the tubes showed a very unusual condition, viz., hyperplasia of the mucosa, the mucosa being changed to fibrous connective tissue, a new formation of blood-vessels, and a new growth of epithelia.

Dr. Jones then exhibited a number of

MICROSCOPICAL SECTIONS OF DISEASED OVARIES.

Patient was forty years of age, feeble and emaciated. Nine years previously she had consulted an eminent specialist, who diagnosed her case inflammation of the ovaries. The disease continued to increase, the left ovary was changed to dense fibrous connective or cicatricial tissue, the outcome of chronic oöphoritis; some portions were calcified, containing globular deposits of lime salts, and between them angular protoplasmic bodies like bone corpuscles. The right ovary was much enlarged, and most of it occupied by a fibroid growth or tumor, while in other portions of the ovary there were a number of small nodular fibromata, in the neighborhood of which the blood-vessels were much enlarged, probably by pressure. In the same ovary was a form of degeneration which Dr. Jones had not elsewhere seen described. In May, 1887, she presented to this Society a microscopical section, showing this formation. The patient had since emaciated and suffered much pain.

Two years before, June, 1885, the speaker had removed diseased ovaries from a woman who had been an invalid for fifteen years. In these ovaries there was the same kind of formation. The case was published in THE MEDICAL RECORD, August, 1886, and the growth pronounced to be sarcoma. In August, 1887, she sent a microscopical specimen of this growth to Waldeyer, of Berlin. He replied October 18, 1887, that it was carcinoma. But from drawings made the summer previous, Dr. Jones could see that in the growth there were tracts of nucleated protoplasmic bodies, which nucleated bodies were coarsely granular, sometimes elongated, sometimes round, or forming an irregular network. When they were round and even they gave very much the appearance of round-cell sarcoma; but in some places these elongated protoplasmic bodies seemed to melt into each other, forming canals, in which were hæmatoblasts and the shadows of blood-corpuscles. Again, many of the protoplasmic bodies were like cut sections of blood-vessels, filled with blood-corpuscles, and in other portions there were completely formed blood-vessels. So the growth is a new formation of blood-vessels. But we do not know why an ovary should degenerate into this structure, or what is its pathological significance.

CANCER OF THE OVARY.

On March 28th, Dr. Jones reported to the Society the removal of a tumor from the floor of the pelvis, which was bound down by firm and strong adhesions, completely grown to the part. Before the operation the diagnosis was made of an enlarged left ovary, caused probably by an abscess. The patient had suffered for many years, but not more than many have suffered from apparently similar conditions. The removal was very difficult, but the patient made an excellent recovery from the operation, had a good appetite, and was apparently in excellent health. During the last two months, however, she has had an increase of pain, and an enlargement at the seat of the old tumor. A microscopical examination of the portion of the ovary that was adherent to the floor of the pelvis shows it to have been a cancer of the most malignant type. The little connective tissue around the cancer nests were infiltrated with the cancer. The tubes were also infiltrated.

DR. HENRY P. LOOMIS presented a specimen of

CYLINDRICAL-CELLED EPITHELIOMA OF THE STOMACH, WITH EXCESSIVE DILATATION.

The patient, a male, forty-eight years of age, was admitted to Bellevue Hospital November 26th. His family history was unknown; he was grossly intemperate, had syphilis as a young man, and gave the evidences of tertiary manifestations. The patient could give no definite statement as to how long he had been ill, but thought he first began to vomit his food about a year ago. He said "he would go for several days eating and then gradually feel more and more loaded up, and finally vomit a quart or more." After unloading his stomach he would have a good appetite and would eat heartily again, but gradually his appetite would fail, and then he would feel an oppression in the epigastrium and would vomit. This was repeated constantly during the past year. Patient suffered a gnawing pain in his epigastrium for the past six months, which gradually became paroxysmal and has never become constant, he all the time growing weaker and losing flesh. Has never vomited blood, but only a slimy, greenish, sour-smelling fluid. During the past few weeks he failed rapidly; had complete anorexia during and after his attacks of vomiting. Bowels have been regular. During the whole of his illness he was anæmic and emaciated. Pulse rapid and feeble. Physical examination of the chest gave negative results. Liver dulness extended from the fifth rib to one and a-half inch below the free borders of the ribs. Abdomen very much retracted. Outline of the stomach was clearly defined, its upper border extended as high as the ensiform cartilage, while the lower border reached three inches below the umbilicus; the pyloric extremity of the stomach extended into the right lumbar region as far as the free border of the ribs; the cardiac end of the organ was in the left lumbar region. No tumor could be detected in the abdomen. The stomach was siphoned, and a large quantity of a slimy, black, sour-smelling fluid was withdrawn, and it was washed out with warm water and a pint of milk was then introduced.

The patient was comfortable for twenty-four hours, and then the washing-out had to be repeated. In spite of nutritive enemas and the introduction of milk into the stomach, the patient died within ten days from asthenia. The test for free hydrochloric acid was employed, with negative results.

Autopsy, made twenty-four hours after death: Lungs showed pulmonary œdema and congestion. Heart, normal. Liver, fatty infiltration with passive congestion. Kidneys, normal. Stomach measured eight inches along its lesser curvature, and twenty-three inches along its greater. It was greatly distended, and could contain about two and a-half quarts of fluid. The opening into the duodenum was so small that with difficulty a medium-sized probe could be passed. At its pyloric extremity was a tumor, circular in form and about an inch and a half in diameter, raised above the mucous membrane of the stomach less than a quarter of an inch. It was of dense consistency and with no portion of its surface eroded, and showed the microscopical elements of epithelioma. Intestines: all the small intestines were very much atrophied, and presented a pale, anæmic appearance.

The following are the interesting points of the case: There were none of the usual symptoms of cancer during life, for the case had been examined by a number of competent gentlemen who had not even suggested the possibility of cancer. No tumor was at any time detected, nor was the growth found at the autopsy sufficient to give signs of a tumor during life. The only symptom which suggested obstruction at the pylorus was the evidence of stomach dilatation. A microscopical examination showed it not to have been the ordinary variety of cancer met with at that situation.

DR. W. P. NORTHRUP presented a case of

EXTENSIVE INTERLOBULAR EMPHYSEMA,

with broncho-pneumonia, in a child aged five months. Patient was sick five days with signs of pneumonia; temperature 104° F. (rectum), and had a discharge from the nose two days before death.

There had been no whooping-cough, no eruptive disease before or with the last sickness, and no pseudo-membrane was visible. Had been ac[illegible]ted a strong and well child. On autopsy the body was found to be well nourished. A small abscess, located on the rib at its junction with the fourth costal cartilage of the right side, was discovered on separating the muscles from the bony wall. This was localized purely in the rib, affecting neither the pleura nor muscles. Pharynx contained moderate amount of mucopus, a thin pellicle of fibrino-pus, and was somewhat congested upon tonsils and elsewhere. Larynx had upon its surface a thin pellicle of fibrin and pus, which showed under the microscope reticulated fibrin containing in its meshes small round cells. This extended as far down as the bifurcation of the trachea. Right lung: broncho-pneumonia of posterior portion of all lobes and extensive interlobular emphysema of upper; large air-sacs, of capacity of a drachm, wedge-shaped, from wide base at margin of the lung, growing smaller to the root. Left lung: broncho-pneumonia of the lower posterior portion. Other organs normal.

Dr. Northrup presented a case very similar to the present at the last meeting of the Society, and thought the second case would be of interest, taken in connection with the first. In neither case was there any convulsive muscular action to account for the lesion, nor any symptom of obstruction in the air-passages.

The Society then went into executive session.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE DEBATE AT THE PATHOLOGICAL SOCIETY ON THE MORBID ANATOMY AND PATHOLOGY OF CHRONIC ALCOHOLISM: SPEECHES BY DRS. HADDEN, ORMEROD, ISAMBARD OWEN, BERNARD O'CONNOR, AND D. R. PEARSON; DR. PAYNE'S REPLY—AN IMPORTANT SUPPLEMENT TO THE OPERATION OF INGUINAL COLOTOMY—CLINICAL INSTRUCTION ON FEVERS.

LONDON, January 21, 1889.

THE special debate at the Pathological Society on the morbid anatomy and pathology of chronic alcoholism was resumed on Tuesday evening last, and brought to a conclusion. Dr. Hadden was the first speaker on the resumption of the debate. He referred to six fatal cases of alcoholic paralysis which had come under his own observation. The spinal cord was normal in all. In five cases the nerves were examined, and found to be degenerated; the changes were more advanced in the smaller nerves. Phthisis was present in four of the cases, miliary tubercles in the lungs in one, softening broncho-pneumonia in one. There was marked cirrhosis of the liver in four out of his six cases and advanced fatty change in the remaining two. He had seen various trophic lesions in cases of alcoholic paralysis. As regarded the influence of alcohol on the kidneys, he had examined between fifty and sixty cases of cirrhosis of the liver, and found interstitial change present in the kidneys in one-third; in only half of this number was the change at all noteworthy. In about one-fifth of these cases of cirrhosis lung-changes existed. It was interesting to note that of fifty cases of granular kidney cirrhosis of the liver was present only once, but in a few there was fatty change.

Dr. Ormerod referred to the sections he had shown from a case of typical alcoholic paralysis. The specimens showed breaking up of the myelin and overgrowth of the endoneurium; some of the axis-cylinders were destroyed. The cause of death was phthisis. He also referred to an alcoholic disease of the nervous system described by Wernicke and Thomsen and to a case of alcoholic ophthalmoplegia described by Dr. Suckling.

Dr. Isambard Owen then related the results arrived at by the Collective Investigation Committee of the British Medical Association on the subject of intemperance. An idea had got abroad that the committee stated that total abstinence was a very bad thing and that total abstainers had a relatively earlier mortality than drunkards. Dr. Owen said he emphatically denied this on behalf of the committee; they had intentionally not announced any definite conclusions. Referring to the data on which the committee based their report, he said they showed that the temperate had an average of sixty-two years of life, the intemperate of fifty-two years, and total abstainers showed an average of only fifty-one years. The lowness of the latter rate was, however, due to the fact that a great majority of total abstainers were young people; total abstainers above forty had at least four years expectation of life longer than the habitually intemperate. The committee also found that the earlier mortality of the habitually intemperate was due to specially alcoholic diseases, such as cirrhosis of the liver, and gout. There was a larger number of the intemperate with kidney diseases than the temperate, but that was shown to be due to gout rather than directly to alcohol.

Dr. Bernard O'Connor asked as to the *modus operandi* of the irritation caused by alcohol. Referring to the fact that different lesions were produced by different alcoholic liquors, he said that among hop-pickers in Kent delirium tremens was more frequently produced by beer than by spirits. He thought gout was produced by other things in beer than alcohol.

Dr. D. R. Pearson then spoke, and said that the liver, being the organ which most directly dealt with alcohol, was found in practice to be first and most largely affected by it. That the lungs and kidneys were more rarely and less affected by it was probably to be accounted for by their office as excretory organs, and by the fact that in the lungs the alcohol met with dilution in the form of watery vapor, and in the kidneys by more direct dilution. The coats of the stomach were probably the only tissues which could be proved to suffer by the direct toxic action of alcohol. Dr. Pearson then discussed in detail the action of alcohol upon the pulmonary tissue.

Dr. Payne then replied. He thought the Society might be congratulated upon the issue of the discussion, but they had not received so much information as he had hoped upon certain points; viz., the condition of the tongue, of the gastric and intestinal membrane, and of the skin in chronic alcoholism. Nor had the discussion brought to light any distinctly new facts with regard to the effect of alcohol on the kidneys. The interest of the subject remained concentrated, as before, chiefly on two points, viz., the effect of alcoholism on the liver and its effect on the nervous system. After discussing at considerable length the facts and opinions put forward by the various speakers, Dr. Payne said the general outcome of the discussion seemed to be that structural, as distinguished from functional, disturbances due to alcohol used in excess had more importance than had been assigned to them, and that the action of alcohol on the tissues was a toxic one and had more resemblance to the action of mineral poisons than we had been accustomed to think. He would venture to draw the corollary that these injurious effects were produced in a preponderating degree, or almost entirely, by concentrated forms of alcoholic drinks. If he were right, the practical conclusion would be that the injuriousness of a large quantity of alcohol was almost in direct proportion to the degree of concentration in which it was ingested.

At the last meeting of the Medical Society of London Mr. Herbert Allingham read a paper in which he suggested an important supplement to the operation of inguinal colotomy. He had observed in several of his cases of inguinal colotomy that the patients afterward suffered from a distressing procidentia of the intestine through the inguinal opening. He had at first imagined that this arose from too large an incision, but did not find such to be the case. He at length came to the conclusion that procidentia occurred only when the sigmoid mesentery was of considerable length. He had devised the following method of operating in such cases: He pulled out through the wound all the intestine that would possibly come forth, and, allowing these portions of the intestine to rest upon the abdomen, then sutured them. In from twelve hours to three days afterward he entirely removed all these pieces of intestine, first having applied a clamp about an inch from the wound to prevent the intestine from slipping. Experience taught him that the clamp must be spiked, and must possess a firm and tenacious grip, otherwise severe hemorrhage might ensue. The clamp should be allowed to remain on for twelve hours—indeed, so long as any slackening of it produced bleeding. Pain occurred when cutting through the mesentery, but not when dealing with the intestine proper.

With all our boasted modern improvements in medical education, there is a danger of its becoming unpractical. Even as regards clinical work there is always a tendency to pay undue attention to rare and interesting cases and to somewhat neglect the study of the more common ailments, which, however, will hereafter occupy so large a proportion of a general practitioner's time and attention. By excluding cases of fever, our large hospitals really encourage ignorance about them. Students have consequently to gain their real experience of such diseases as measles and scarlet fever, after leaving the hospital. I have, indeed, known a case in which a student never met with a case of measles at all during his student career,

but encountered his first case after becoming qualified. Under the old apprenticeship system—the extinction of which is regretted by many practitioners—such an incident would have been impossible of occurrence. Under these circumstances, it is gratifying to find that it is proposed to utilize for teaching purposes the fever hospitals of the Metropolitan Asylums Board. The danger of infection is, however, not to be disregarded in visiting such institutions. Should the proposition be carried out, it is to be hoped that the students attending will be required to use every reasonable precaution against infection. It would, indeed, be well to admit at first only those already protected by previous attacks.

THE TWENTY-FIVE BEST DRUGS.

To the Editor of The Medical Record.

Sir: In the editorial on "The Best Twenty-five Drugs," in your issue of January 19, 1889, you invite correspondence from physicians in general practice.

I believe in medicine, as in letters, that the end desired can be equally well attained by different means. The practice of medicine is not an exact science, and specifics among drugs are rare, if, indeed, any at all exist. It will do us all good, however, to learn with what preparations our fellow-practitioners alleviate and cure diseases. Your list is an excellent one, but I should omit from it ether, aloes, chloral, and nitrites, and substitute gelsemium, rhubarb, bismuth, and glycerine. I should also want "bicarbonate of potash" changed to read "potash," regarding the nitrate, chlorate, acetate, and hydrate of as much, if not more value than the bicarbonate.

If your order is to be regarded as that of merit or value I should want some changes made. But I do not so understand your intention, so I follow the same order. My list of the twenty-five best drugs—agreeing with your editorial that many more are often used to advantage—is: 1, Opium; 2, mercury; 3, iodides; 4, quinine; 5, chloroform; 6, gelsemium; 7, sulphate of magnesia; 8, salicylic acid; 9, rhubarb; 10, alcohol; 11, bromides; 12, iron; 13, bismuth; 14, castor-oil; 15, digitalis; 16, arsenic; 17, colchicum; 18, ipecac; 19, aconite; 20, strychnia; 21, cocaine; 22, ergot; 23, potash; 24, mineral acids; 25, glycerine.

Very truly yours,

Spencer M. Free, M.D.

Beechtree, Pa., January 29, 1889.

AN INCONVENIENCE OF THE METRIC SYSTEM.

To the Editor of The Medical Record.

Sir: In the discussions of the merits of the decimal system of weights and measures which have come under my notice I have not observed any mention of one drawback which I have found in my own experience, and have noticed sufficiently often in the writings of others to lead me to think my mind is not altogether peculiar in that respect—I refer to a tendency to confuse the different denominations—centigrammes and milligrammes, centimetres and millimetres—which I have not observed in the use of drachms and grains, feet and inches. For example, I would refer to the very interesting article of Dana on "Cranio-cerebral Topography," in your issue of January 12th. On page 35 he gives the situation of the upper end of the fissure of Rolando in children as "30 ctm. behind the bregma in one case, 38 and 40 in two others," which would be equal to 11.8 inches in the first case, and 15.7 in the last—measurements which would imply a pretty high degree of hydrocephalus. He gives the same measurement in adults (p. 37) from 25 to 30 mm., and then, in the following paragraphs, goes on to quote Féré to the effect that "in imbeciles with arrested development of the fore brain the upper end is nearer the bregma, being from 30 to 32 ctm. behind it," and makes Fouillehouze say that in children the same measurement is 30 to 35 ctm. I have not verified the references, but if they are correct it would show that the evil I deplore is more wide-spread than I supposed.

Again, p. 40, he informs us that the optic thalamus and corpus striatum lie about 35 ctm. (14 inches) below the surface of the brain.

These errors, as they stand, are probably harmless, but if the author should make analogous mistakes with equal frequency in his prescribing, it would be for the interest of his patients that he should have a careful apothecary.

Decimal.

Little Rock, Ark., January 17, 1889.

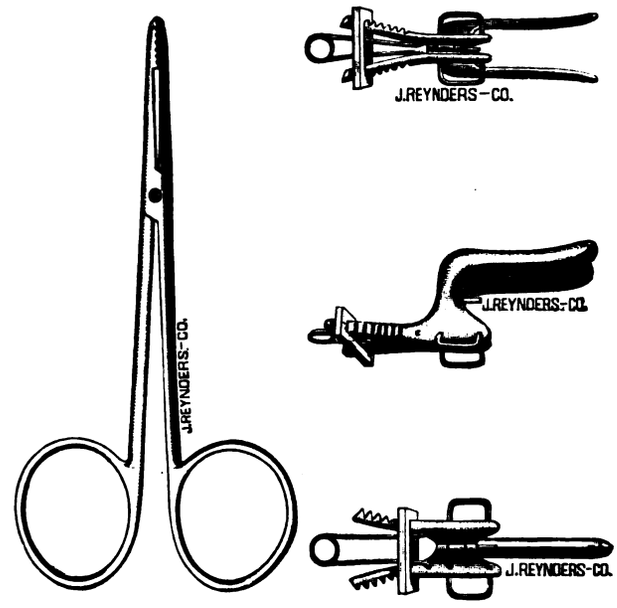
New Instruments.

A NEW INSTRUMENT FOR TRACHEOTOMY.

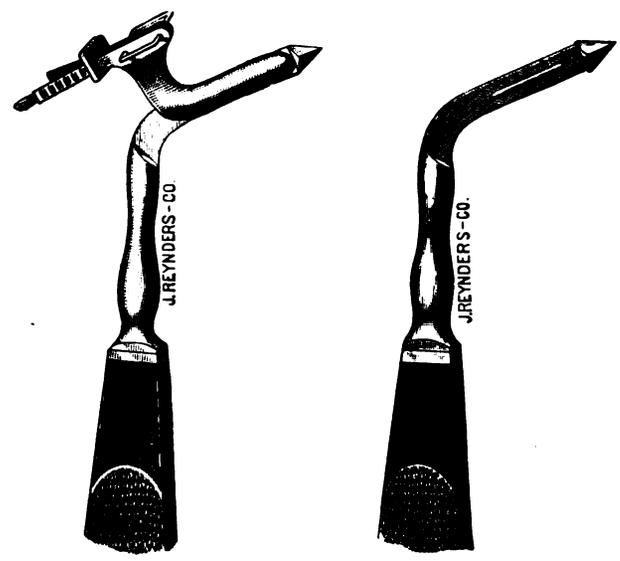
By Edgar Holden, M.D.,

Newark, N. J.

This instrument was designed to add to our resources for relief in occlusion of the larynx, and possibly to take the



place of tracheotomy and intubation in some cases, particularly where interference must be immediate. The drawings submitted are of the full size of the instrument.



It consists, 1st, of a curved pair of smooth blades about one inch in length, and one-sixth to one-eighth in width, fringed at the base with flaring lower ends and

lever-like projections; 2d, of a handle with curved, trocar-like point, on which the blades fit for introduction.

The perforation is made through the crico-thyroid space, the hinged blades (or divulsor) are detached, the trocar withdrawn and the closed blades slipped upward between the vocal cords, separated and held apart by a perforated bar, which drops or can be pressed downward for the purpose. The operation can be almost instantaneous, almost bloodless, and the instrument withdrawn and replaced at will.

The opening into the air-passages is but two lines in width, and is closed by the divulsor. The parts remaining outside permit a view of the edges of the wound.

The drawings will perhaps explain the device without further description.

It is, perhaps, not applicable to infants, in whom the crico-thyroid space has not developed so as to be readily felt by the finger.

P.S.—The instrument is made by John Reynders & Co., New York.

Army and Navy News.

Official List of Changes in the Stations ana Duties of Officers serving in the Medical Department, United States Army, from February 3 to February 9, 1889.

BAXTER, JEDEDIAH H., Colonel and Chief Medical Purveyor. By direction of the Secretary of War, to proceed to New York City on public business connected with the Medical Department, and on completion thereof to return to his station in this city. Par. 17, S. O. 30, A. G. O., Washington, February 5, 1889.

STERNBERG, GEORGE M., Major and Surgeon. By direction of the President, in pursuance of the authority contained in the provisions of the act of Congress approved March 3, 1887, "making appropriations for sundry civil expenses of the Government," etc., relating to the methods of preventing the spread of epidemic diseases, to proceed to the Island of Cuba for the purpose named in the letter of the President addressed to the Secretary of War, April 17, 1888, and upon completion of this duty to return to his proper station and submit his report to the President. Par. 16, S. O. 30, A. G. O., Washington, February 5, 1889.

STERNBERG, GEORGE M., Major and Surgeon. By direction of the Secretary of War, is relieved from duty as attending surgeon and examiner of recruits at Baltimore, Md., to enable him to comply with the requirements of paragraph 16, S. O. No. 30, of the 5th instant. Par. 4, S. O. 31, A. G. O., Washington, February 6, 1889.

BAILY, JOSEPH C., Lieutenant-Colonel and Assistant Medical Purveyor, and HEIZMANN, CHARLES L., Major and Surgeon. By direction of the President, detailed as members of the Army Retiring Board at San Antonio, Tex., convened by War Department order dated January 16, 1888, published in S. O. No. 12, January 16, 1888, from Headquarters of the Army, vice Lieutenant-Colonel Edward P. Vallum and Major Francis L. Town, hereby relieved. Par. 15, S. O. No. 28, A. G. O., Washington, February 2, 1889.

SHUFELDT, ROBERT W., Captain and Assistant Surgeon. By direction of the Secretary of War, having appeared before the Army Retiring Board at Fort Leavenworth, Kan., in compliance with paragraph 1, S. O. No. 4, January 5, 1889, from this office, will repair to this city to await action on the proceedings in his case. Par. 12, S. O. 32, A. G. O., Washington, D. C., February 7, 1889.

KILBOURNE, HENRY S., Captain and Assistant Surgeon. Having complied with par. 2, S. O. No. 6, Department of the Columbia, will return to his station, Vancouver Barracks, W. T. Par. 1, S. O. 9, Headquarters Division of the Pacific, San Francisco, Cal., February 2, 1889.

THEARNS, EDGAR A., Captain and Assistant Surgeon, Fort Snelling, Minn., will proceed without delay to Fort Pembina, Dak., and report to commanding officer of that post for temporary duty. Par. 3, S. O. 12, Headquarters Department of Dakota, St. Paul, Minn., January 31, 1889.

LA GARDE, LOUIS A., Captain and Assistant Surgeon. By direction of the Secretary of War, leave of absence granted in S. O. No. 290, December 13, 1888, from this office, is extended three months. Par. 2, S. O. 31, A. G. O., Washington, February 6, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending February 9, 1889.

HALL, J. H., Passed Assistant Surgeon. Ordered to Naval Hospital, Washington, D. C.

ECKSTEIN, H. C., Surgeon. Detached from U. S. S. Adams and wait orders.

DIXON, W. S., Surgeon. Detached from special duty at Baltimore, Md., and to the U. S. S. Boston.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending February 9, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	10	0
Scarlet fever	332	55
Cerebro-spinal meningitis	5	2
Measles	271	23
Diphtheria	192	50
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

BACTERIAL ORIGIN OF YELLOW FEVER.—Dr. Paul Gibier, of Paris, N. Y., referring to his recent paper before the Academy of Medicine, writes: "I have not said that 'it was my opinion that if yellow fever was a bacterial disease, it would not be impossible to *confine* it to the inhabitants of countries exposed to the epidemic.' At first, I did not doubt at all of the bacterial nature of yellow fever, and I said that 'it would not be impossible *to protect* against yellow fever,' etc. . . . I shall say more, and will avail of your courteous hospitality to tell you that from experiments I have performed on the bacillus isolated by me in Havana and in Jacksonville, I am positive that the germ of yellow fever could be easily destroyed at its sources."

DURATION OF INCUBATION AND CONTAGIOUSNESS.—The following circular has been issued by the Clinical Society of London: "Ten years ago the Clinical Society of London appointed a Committee to investigate the periods of incubation and of contagiousness of the commoner communicable diseases. A certain amount of valuable material was received, but it was thought desirable to defer the presentation of a report until further experience was available. The Society has now determined to gather additional information with a view to the preparation of an early report on the subject, and for this purpose has reconstituted the Committee. The Committee is desirous of obtaining particulars of cases which throw light upon the periods of incubation and contagiousness of the below-mentioned diseases, and will be grateful for notes of any cases where the facts can be ascertained with sufficient precision to afford grounds for conclusions. It is thought that gentlemen practising at a distance from large centres of population, and especially those engaged in the Public Health Service, or associated with schools, would be able

to supply information of the kind required. A single case in which the dates of exposure to infection and the appearance of the first symptom can be accurately fixed, especially where the exposure has been limited in duration, would be highly valued. The following diseases are included within the scope of the inquiry: Variola, varicella, measles, German measles, scarlet fever, typhus, relapsing fever, whooping-cough, diphtheria, enteric fever, cholera, erysipelas, mumps, infectious sore-throat. The Committee consists of Dr. W. H. Broadbent, Dr. George Buchanan, Dr. Cayley, Dr. Thomas Barlow, Dr. Alfred Hill, Dr. Isambard Owen, Dr. Thorne Thorne, Dr. Alder Smith, and Mr. R. W. Parker with Mr. Shirley Murphy, 41 Queen Anne Street, and Dr. Dawson Williams, 25 Old Burlington Street, W., as Honorary Secretaries, to one of whom communications should be addressed. W. H. Broadbent, *Chairman of Committee.*—Clinical Society of London, January, 1889. P. S.—An early reply would facilitate the work of the Committee."

Concerning Electrical Instruments Used in the United States.—Dr. A. de Watteville, editor of *Brain* (London, England), writes: "May I appeal to your generosity for a corner of your valuable space? The object is, I am afraid, rather a personal one; but American courtesy to foreigners is too well known for me to apprehend a rebuff. The matter is plainly this: I wish to appeal to those of your readers interested in medical electricity for a few hints regarding the various instruments made and used in the States, which give satisfaction, and in what particular direction; what firms stand highest in the esteem of professional experts; in what particulars the several American instruments surpass, or are inferior to, those of European make. I do not, of course, expect more than brief hints on the part of those of my professional brethren willing to assist me; and every statement will be treated as strictly confidential. Reprints of articles and illustrated catalogues of the leading firms will be also gladly received."

Polyandry.—The form of polygamy with which we are most familiar is that where the husband has more wives than one. Among some nations, in a more or less uncivilized state, it is, indeed, as much the custom as monogamy is in civilized countries. Another form of polygamy, where the woman has more than one husband, called polyandry, exists in several parts of the world widely separated from each other. Thus, it has been found among the people inhabiting the centre of Ceylon; among the Todas and Nairs of Southern India; among the Iroquois Indians of America; among the aboriginal inhabitants of Tasmania before they became extinct; and it is found to be especially prevalent among the inhabitants of Thibet. As practised in the latter country, it seems to differ from the custom in other countries where it occurs, in that the husbands are brothers or nearly related kinsmen, so that the woman becomes the wife of the whole family. Instances, where as many as five or six brothers have one wife in common to all of them, have been recorded; but in most cases a woman has not more than two or three husbands. The choice of a wife for the family is the right of the eldest brother, whose marriage contract involves contracts with all his brothers. The children are regarded as the common property of the house, and all the husbands are treated as their fathers without distinction. The custom appears to work peaceably and well, and is practised by all classes of the community. The effect of its existence is that there is a large surplus female population, who are provided for in nunneries, where they learn to read and copy the Thibetan Scriptures, and are otherwise engaged in religious services. It seems to prevail wherever the Thibetan language is spoken, even in districts on the Indian side of the mountain boundaries of the country, though, in places where the people have come much in contact with Hindus and Mohammedans, the reverse form—plurality of wives—is also to be found. The system is said to have existed since pre-historic times, so that the cause of its origin is speculative. It seems to be in no way connected with the Thibetan religion. The suggestion has been made that it arose in troubled times, when men were forced to be absent from home for long periods, and the defence of their wives and families devolved on the younger brothers left behind. The view which most travellers seem to adopt is that it owes its origin to the poverty of the country and the desire to limit the population. The custom may possibly be another form of that which existed in Biblical times, where it was the duty of the younger brother, in the event of his elder brother leaving no children, to marry the wife of his deceased brother.—*The British Medical Journal.*

The Bacterial Origin of Acute Otitis Media.—Dr. Netter says that acute otitis media is not always due to the same micro-organism. There are several varieties, each having a specific microbic origin, and each partakes of the characteristics of the germ which produces it. Streptococcus pyogenes is the most frequent pathogenic factor. They appear as chains of round or more or less long and flexible beads. Other bacteria may produce a fetid odor or a more fluid secretion. In eleven cases observed by the author, there was no preceding cachexia, with the exception of slight pharyngitis and coryza in two; one case followed tuberculosis; four cases complicated typhoid fever; two were consequent on measles. The otitis of streptococcus is often bilateral. In five cases the otitis was followed by complications evidently due to streptococci; these complications were superficial suppuration of the mastoid, suppuration of the mastoid cells, meningitis, phlebitis of the sinus, followed by purulent infection. Complications do not necessarily follow, but are always possible. The pneumococci of Fränkel may cause an otitis media; they were present in four cases. They may appear in typhoid fever and in other inflammations than pneumonia. The progress of this form of otitis is rapid, and the perforation is complete; meningitis may be observed, but recovery usually results. Staphylococcus aureus have been observed in the same cases with pneumococci. Netter found staphylococcus aureus in the discharge from four cases of otitis media. Fränkel and Simmonds discovered staphylococcus flavus in two cases, and Rohrer has seen staphylococcus pyogenes albus. The otitis media, in all its forms, is due to the presence in the middle ear of the parasitic organisms. They may penetrate through the Eustachian tube, and may enter the capillaries and be taken up by the blood; they may also enter the cranial cavity by the lymphatic system. All of the germs which have been observed in otitis media may be found in the healthy subject. To produce inflammation in the middle ear it is necessary that they should be present in sufficient quantity to become virulent. It is very rare that microbes are found in the blood or lymphatic vessels, their seat is usually the mouth or nasal cavity, and their numbers and activity may be lessened by antiseptic gargles.—*The Occidental Medical Times*, January, 1889.

To Blister the Skin Quickly.—Into a watch-glass, pill-box, or any similar small receptacle, pour ten drops of concentrated water of ammonia (aqua ammonia fortior); cover the liquid with a bit of linen or a little cotton-wool, and at once apply the cup upon the skin where the blister is required. Press so that the vapor is confined to the inside of the vessel. A red circle will directly be observed outside, when it will be certain vesication has taken place. Half a minute or so is all the time required to obtain the result. The blister may be dressed in the usual manner of dealing with a blister from cantharides. Acetic acid, concentrated, applied to the skin, will also in a few minutes produce vesication. In such cases evaporation should be prevented by some suitable covering. Bibulous paper slightly wetted with a little of the ethereal extract of cantharides, instantly applied to the skin and covered with a piece of adhesive plaster, will answer for the same purpose.

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Original Lectures.

ACUTE PANCREATITIS.

A CONSIDERATION OF PANCREATIC HEMORRHAGE, HEMORRHAGIC, SUPPURATIVE, AND GANGRENOUS PANCREATITIS, AND OF DISSEMINATED FAT-NECROSIS.[1]

BY REGINALD H. FITZ, M.D.,

SHATTUCK PROFESSOR OF PATHOLOGICAL ANATOMY IN HARVARD UNIVERSITY AND PHYSICIAN TO THE MASSACHUSETTS GENERAL HOSPITAL.

PART I.

UNTIL the time of Clässen [2] the evidence of an acute inflammation of the pancreas was almost wholly theoretical, and was not controlled by any considerable number of anatomical observations. Mercury was known to produce salivation, and the watery diarrhœa following its use was supposed to be due to irritation of the pancreas.

Influenced by this and other considerations, Schmackpfeffer,[3] having found certain alterations of the pancreas in a syphilitic woman who had been liberally treated with mercury, attributed her symptoms to the pancreatic changes. The latter he regarded as anatomical evidence of an acute inflammation. He describes [4] these changes as follows: "The pancreas was unusually dense, dry, and very much swollen; it was inflamed and red throughout, although more in the right than in the left side. Numerous drops of blood escaped from the cut surface. The duct was very much dilated, especially at its mouth. The gland weighed 5¾ ounces.

Some years later Neumann[5] stated that "death might take place within a few hours from a fatal metastasis of the buccal salivation to the pancreas. This happens when, in the midst of profuse salivation, the pulse sinks and quickens or the swelling of the salivary glands subsides and salivation is replaced by a green diarrhœa, while the skin is dry and shrunken." Under such circumstances the pancreas is found decidedly swollen, although but slightly reddened.

Clässen [6] knows of no observations in confirmation of Neumann's statement, and doubts its truth. He collects, however, a half-dozen cases, among them Schmackpfeffer's, of what he regards as fatal pancreatic inflammation, and from them he establishes the symptomatology of acute pancreatitis. The views thus obtained have essentially prevailed up to the time of Friedreich's article in Ziemssen's "Cyclopædia" in 1875.

The lesions found were as follows: In the second case, that of Juppin [7] "a section was made through the pancreas. Its tissue was dense and friable. It was a third larger round than normal; it encircled two-thirds of the duodenum, which it compressed, and it affected the pylorus also. . . . The pyloric opening was almost entirely closed, and the tip of the little finger could be introduced only with great difficulty and after repeated efforts. A vertical section through the pylorus showed it to be of almost cartilaginous density."

The third case is credited to Casper.[8] "All the organs of the remarkably handsome, though excessively fat, body were wholly normal with the exception of the pancreas. This was swollen to the size of a large fist, of cartilaginous density, firmly united to the duodenum, and in part to the stomach, and was of a brownish-red color. Its structure was not recognizable."

The fourth observation is also from Casper.[9]

"The pancreas was so much enlarged that its head was a half hand's-breadth wide, much infiltrated with blood, very dense, its structure not recognizable. In consequence of the enlargement of the gland its shape was more globular than round."

Rahn[10] is the authority for the fifth case. The stomach was dilated "almost to bursting," and was filled with clotted blood. "In the middle of the abdomen there projected from the abdominal aorta a dense, scirrhous tumor as large as the fist. It was intimately united to the aorta, and so compressed it that when the aorta was opened the finger would not pass through the narrowed canal. The narrowed portion was immediately below the origin of the cœliac artery. On close examination of the tumor with reference to its origin, the head of the pancreas was degenerated in this scirrhous mass, while the left part of the gland was in a wholly healthy state."

The sixth case is from Morgagni.[11] "The pancreas was unusually large, and contained round, tolerably large tumors of a density somewhat approaching that of cartilage."

To these is added another, possible, case from Lieutaud,[12] in which, after an acute attack of gastric pain, fever, vomiting, anxiety, and frequent fainting, "the pancreas was found much enlarged, hard, and scirrhous throughout. The left kidney was in a state of liquefaction."

The first case may have been one of mercurial poisoning; the second was one of probable malignant disease. The third and fourth are possibly of inflamed pancreas, but the evidence is insufficient to clearly establish the diagnosis. The fifth case may have been one of aneurism, while the last two are more suggestive of malignant disease than of acute pancreatic inflammation.

The common symptoms were deep-seated pain near the stomach, producing a peculiar anxiety, restlessness, perhaps frequent fainting. The pain bore no definite relation to the vomiting or other symptoms, and was not increased in proportion to external pressure. The vomiting was forcible, more or less greenish material being expelled. The abdomen was moderately tense, there was slight fever, and the appetite was but little disturbed and might be increased. There was a moist tongue, thirst, and constipation.

The effect of Clässen's treatment of the subject may be seen nearly thirty years later in the statement by Wardwell [13] that the prominent symptoms of acute pancreatitis are deep-seated, dull, epigastric pain, distention, sickness, and vomiting of a clear, greenish, viscid fluid; thirst, faintness, moist tongue, constipation, and slight pyrexia.

The first step toward an essential modification of these

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[1] The Middleton Goldsmith Lecture for 1889, delivered before the New York Pathological Society, February 16, 1889.

[2] Die Krankh. d. Bauchspeicheidr., 1842.

[3] Diss. inaug. de quibusd. Pancreatis Morbis, 1817, 26.

[4] Op. cit., 25.

[5] Von den Krankh. des Menschen, Berlin, 1836; Clässen, op. cit., 192.

[6] Op. cit., 193.

[7] Journ. de méd. chir. pharmac., 1791, lxxix., 73; Clässen, p. 200.

[8] Wochenschr. f. d. ges. Heilkde., 1836, 437; Clässen, op. cit., 207.

[9] Wochenschr. f. d. ges. Heilkde., 1836, 439; Clässen, op. cit., 213.

[10] Schirrhosi Pancreatis Diagnosis, 1796, obs. 1; Clässen, op. cit., 218.

[11] De Sedibus et Caus. Morb., 1765, iii., Epist. xxx., art. 10; Clässen, op. cit., 212.

[12] Hist. anat. Med., 1767, i., obs. 1021.

[13] Reynold's Syst. of Med., 1871, iii., 414.

views was made by Klebs, in 1870.[14] He preferred to say nothing about inflammation of the pancreas, but described the various lesions which have been found in and around this gland, without attempting to show their possible relations to each other. He availed himself of the cases published by Portal, Hooper, Löschner, Haller, and Klob, and of one in his own experience, to associate pancreatic hemorrhage with severe symptoms and to recognize the possibility of a hemorrhagic inflammation of the pancreas, already admitted by Rokitansky,[15] as a very rare occurrence. Klebs further recognized that this hemorrhagic inflammation might possibly result in a purulent peripancreatitis with partial sequestration of the gland.

Friedreich,[16] however, undertook to present a complete picture of acute pancreatitis more in accordance with the anatomical treatment of Klebs than with that of Clässen. He availed himself of the cases used by Klebs; in addition, of one reported by Oppolzer, and of another under his own observation. He suggested that acute pancreatitis was either primary or secondary. The former appeared to have a tendency to hemorrhage in the pancreas or in its vicinity, in which case a termination in gangrene and ichorous peripancreatitis might occur. If the acute pancreatitis became suppurative, multiple, minute abscesses were to be found, which tended to become confluent and to produce a resulting peritonitis.

The secondary variety of acute pancreatitis was either the granular degeneration found in infective diseases, or the circumscribed "metastatic" abscess. The possibility of a metastatic pancreatitis in the course of a parotitis was not to be absolutely denied, especially in virtue of the case reported by Schmackpfeffer.[17]

As there is a doubt of the existence of a pancreatitis in the case, it may be safely stated that there is no reason for admitting the existence of a metastatic pancreatitis secondary to inflammation of the parotid gland. It is evident[18] that an acute parotitis may arise during the course of a pancreatic inflammation. This single instance of association is presumably analogous to the occurrence of parotid inflammation in septic conditions of various origin.

Since Friedreich's anatomical recognition of an acute pancreatitis was based upon the consideration of four cases, he admitted his symptomatology of this affection to be neither precise nor complete. Furthermore, he seems[19] to include under the head of pancreatic hemorrhage those cases where this lesion is associated with necrosis and gangrene, and others where hemorrhage into the pancreas appears to be the sole cause of sudden death.

Klebs[20] had already recognized the existence of a suppurative peripancreatitis, and stated, presumably from his own observation, that in most instances this proceeded from lymph-glands. These were either the seat of metastatic abscesses or were primarily diseased by traumatic agencies or injurious food. Such abscesses were regarded as occasional causes of thrombosis of the mesenteric and portal veins. He recognized a possible eventual separation of the pancreas from surroundings by the extension of the suppurative process.

He thought it possible that the case of Haller and Klob,[21] already admitted as of hemorrhagic pancreatitis, might belong to this series, and regarded that reported by Gendrin[22] as illustrative.

In the light of the observations published up to the time of his article, Klebs regarded as of doubtful existence any pancreatic abscesses which did not arise from a peripancreatitis or from a suppurating cyst.

Important evidence as to the possible method of origin of a peripancreatitis was furnished by Chiari,[23] who found a round ulcer of the stomach communicating with the cavity of the omentum. The latter contained a spacious abscess with several openings into the jejunum. Lying free within this cavity was a shreddy mass of tissue, 12 ctm. long. It was brownish black, friable, and presented the structure of the pancreas.

Four years later, Chiari published the report of a case[24] by Schlossberger, in which the sloughing pancreas was discharged through the bowels. He reported still another[25] of earlier occurrence, in 1862. The sloughing pancreas, discharged from the bowels, was brought to Rokitansky by Trafoyer.

The next communication of especial importance in connection with the subject of pancreatic inflammation is that of Balser.[26] He calls attention[27] to the presence of nodules and patches of necrotic fat-tissue in the mesentery and in the contents of a cavity behind the mesentery. In the latter lay the pancreas also, attached to the duodenum, and its lobules appearing as if macerated. A second case was reported by him,[28] in which there were patches of necrosis of the abdominal fat associated with similar appearances in the pancreas. In addition, there was evidence of old and recent hemorrhage in the gland.

My own interest in this subject was first particularly aroused in 1876. At the request of Dr. J. P. Maynard, of Dedham, Mass., I made the post-mortem examination of a lady of uncertain age, not especially fat, who fell on the floor while apparently in her usual good health. She died within thirty minutes. In the meantime she complained of pain in the lower part of the chest. Her respiration became hurried, the pulse feeble; a short convulsion occurred, and death took place. The abnormal appearances found were several nodules and patches, the largest of the volume of a walnut, of freshly extravasated blood at the periphery of the posterior portion of both lower pulmonary lobes. There were several patches, of considerable size, of submucous hemorrhage near the ileo-cæcal valve along the mesentery. The pancreas was thin and very flaccid, with occasional slight, subperitoneal hemorrhages. Section through the organ showed similar hemorrhages in its substance. The gland-lobules were of a reddish-gray color, the general surface spotted with white specks. Microscopic examination showed extensive fatty degenerations of the gland-cells; many fat-drops, being exceedingly minute. The interstitial fat was frequently crystallized, and at times bundles of orange, acicular crystals (hæmatoidin?) were found.

The cœliac plexus was examined, and nothing abnormal found. The heart was contracted; its cavities contained mainly fluid blood. The mesenteric veins near the cæcum were injected. The liver and kidneys were injected; the spleen and suprarenal capsules were normal. Nothing abnormal was found in the brain or heart. It was considered, at the time, that the history of the case and the appearances found were best explained on the ground of Zenker's communication,[29] which will be soon referred to more particularly.

Since then it has been my opportunity, largely owing to the zeal of Drs. Gannett and Whitney, to have seen at least a dozen examples of pancreatic hemorrhage, with or without necrosis of fat-tissue, and of necrosis of fat-tissue without pancreatic hemorrhage. I have been present at several of the post-mortem examinations at which the diseased pancreas has been found, and have demonstrated to the students of the Harvard Medical School many of the specimens which have been removed by my friends and colleagues.

Having thus been impressed with the importance of the subject, I take this opportunity of utilizing the material which has been gradually accumulated by Dr. W. F. Whitney, the curator of the Warren Anatomical Museum. The value of this material is greatly enhanced by the records of the clinical course of the disease in question, which have been furnished by those in charge of the

[14] Handb. d. path. Anatomie, 1876, i., 2, 553.
[15] Lehrb. d. path. Anat., 3te Aufl., 1861, iii., 309, 242.
[16] Ziemssen's Handb. d. Path. und Therap., 1875, viii., 2.
[17] P. 1. [18] Case LVIII. [19] Op. cit., 273. [20] Op. cit., 556.
[21] Case LVI. [22] P. —. [23] Case LVIII.
[24] Case LIX. [25] Case LVII.
[26] Virchow's Arch., 1882., xc., 520. [27] Case LXIV.
[28] Case XXIV.
[29] Deutsche Zeitschr. f. pr. Med., 1874, ii., 351.

patients. In addition, a collection of similar cases has been gathered from medical literature, which of late years has been especially prolific in this subject.

This paper will include a consideration of:

The liability of the pancreas to hemorrhage;

The association of hemorrhage with acute pancreatitis;

The occurrence of acute pancreatitis without hemorrhage; and

The relation of acute pancreatitis to fat-necrosis.

Pancreatic hemorrhage.— Although Klob [30] regarded interstitial pancreatic hemorrhage as not rare, he found it only, and then not constantly, in extreme portal stagnation.

Spiess,[31] however, in 1866, reported to the Frankfort Medical Society a case [32] of sudden death due to an extensive interlobular, pancreatic hemorrhage. His observation, though unique, escaped attention.

Klebs, as already stated (p. 198), had associated pancreatic hemorrhage with severe symptoms, and suggested that the hemorrhage might be due, in the absence of inflammatory changes in the interstitial tissue, to the corrosive action of the pancreatic secretion.

Zenker [33] then reported three cases as of fatal pancreatic hemorrhage. This lesion, however, existed in only two of them,[34] while in the third the hemorrhage was near the pancreas, in the hilus of the spleen. In this last case, and in one of the others, there was a striking venous injection of the solar plexus. He regarded this as the immediate cause of the sudden death, in accordance with the results of Goltz's experiment of cardiac paralysis by a blow on the frog's abdomen. He found in one of his cases a flabby heart with distended, empty cavities associated with marked injection of the abdominal organs, as in the frog experimented upon.

Prince [35] then published a paper on this subject, and Draper [36] reported a series of cases of sudden death from pancreatic hemorrhage.

Virchow,[37] however, in most recent times, has stated that nothing is more rare than hemorrhage in the pancreas.

The relative frequency and absolute importance of pancreatic hemorrhage is thus, unquestionably, a discovery of very recent origin. There are, however, a considerable number of recorded cases which show that sudden and unexpected death may occur, and a conspicuous hemorrhage be found in or near the pancreas as the sole significant lesion. Such hemorrhages may occur in a previously diseased pancreas or individual, or it may take place when the person is apparently in his usual health, and the pancreas gives no evidence of any acute disease.

Both groups illustrate the liability of the pancreas to hemorrhage, but the conditions of its occurrence must vary in each.

In the first series, the hemorrhage is associated with certain lesions of the pancreas of a chronic character. The earliest case of this sort, and one which has been quoted in evidence of pancreatic hemorrhage as a cause of sudden death, is that of Störck.[38]

A woman, aged twenty-eight, during the catamenial period, was seized with severe vomiting. The flow was arrested; chills, dyspnœa, and palpitation followed. Although she gradually improved, an epigastric pulsation became apparent, synchronous with the heart beat. After the next menstrual period this pulsation became more severe, and a resistant pulsating tumor could be felt below the stomach. The tumor increased in size, and there was a sense of weight in the epigastrium. During the subsequent three and a half months the symptoms improved, the palpitation became less, and the tumor smaller and softer. Sudden weakness then occurred, there was a rust-colored vomit, bilious stools, sudden increase in the size of the tumor, rapid emaciation, and death.

The pancreas was found so large and heavy as to weigh thirteen pounds. It formed a sac filled with blood, partly grumous and partly laminated. The stomach, intestines, and omentum were displaced and compressed.

The evidence here presented is not sufficient to exclude the possibility of the chief lesion in this case being an aneurism of some artery in the vicinity of the pancreas. If Störck's view be accpted that there was a hemorrhage within the pancreas, we have merely an illustration of what has been repeatedly found since his time, namely, hemorrhage into a pancreatic cyst.

The first indubitable case of this sort on record is to be found in the museum of the Harvard Medical School. It was published by Gross [39] from the MSS. furnished by Dr. J. B. S. Jackson, and has also been published by the latter.[40]

For several months before the patient's death a tumor was noticed in the epigastric and right hypochondriac regions. There were also signs of advanced phthisis. The patient sat up every day until a short time before his death. The day before this took place he was found partially comatose. The tumor was a cyst of the pancreas, containing from ten to fourteen ounces of bloody-looking serous fluid without coagula.

The conspicuously hemorrhagic contents of pancreatic cysts have been also noticed by Anger,[41] Küster,[42] Bull,[43] Kocher,[44] Wölfler,[45] Hagenbach,[46] and Steele.[47] The case reported by Pepper [48] as one of fatal hemorrhage from a pancreatic cyst admits of another explanation. The patient, an intemperate man, had frequently recurring intestinal hemorrhages for six months. He had two attacks of bloody vomit within five weeks, and finally an attack of gastro-intestinal hemorrhage, proving fatal in an hour. The blood came through an opening in the duodenum, a half-inch in diameter, near the common duct. A probe, passed through the opening, entered a cavity in the head of the pancreas of the size of a walnut. Its walls were trabeculated, but "everywhere covered by a smooth mucous membrane;" numerous crystals of hæmatine were lying on the surface. "But little of the proper gland-tissue was to be seen in this part of the organ, its place having been apparently usurped by dense fibrous tissue. The same state of affairs is also observable in the body and tail of the gland, although in a less marked degree." It seems more probable, from the symptoms in this case, the seat of the cavity, the nature of the duodenal opening, and the history of pancreatic cysts, that this was rather a case of perforating duodenal ulcer with corrosion of the pancreas than of pancreatic cyst opening into the duodenum.

Doubts are also to be entertained concerning Rugg's case,[49] reported as one of fatal hemorrhage from the pancreas. In 1843 he had a male patient, thirty-two years of age, who was rapidly recovering from a severe attack of acute rheumatism, but was up and dressed on the day before his death. He had frequently complained of severe pains in the epigastrium, but these had left him a few days before his death, and were replaced by acute pains in the left lumbar region. He was suddenly seized with agonizing pain in the latter place. His countenance became anxious, his lips pale, pulse imperceptible, skin cold and sweating, and death took place in an hour. The

[30] Oesterreich Zeitschr. f. pr. Heilkde., 1860, v., 529.
[31] Schmidt's Jahrb., 1867, cxxxiv., 270.
[32] Case I. [33] Loc. cit. [34] Cases III. and IV.
[35] Boston Medical and Surgical Journal, 1882, cvi., 28.
[36] Trans. Asso. Am. Phys., 1886, i., 243.
[37] Berl. klin. Woch., 1887, ix., 155.
[38] Annus Med. Second, 1762, 245.
[39] Elements of Path. Anatomy, 1839, ii., 209.
[40] Catalogue of the Museum of the Boston Med. Improvement Soc., 1847, 174.
[41] Bull. Soc. Anat. de Paris, 1865, xl., 92.
[42] Berliner klin. Woch., 1887, ix., 154.
[43] New York Medical Journal, 1887, xlvi., 376.
[44] Corresp. bl. f. schweizer Aerzte, 1888, 279; British Medical Journal, 1888, i., 1267.
[45] Zeitschr. f. Heilkde., 1888, ix., 119.
[46] Deutsche Zeitschr. f. Chirurgie, 1888, xxvii., 110.
[47] Chicago Medical Journal and Examiner, 1888, lvi., 205.
[48] Proceedings Phila. Path. Soc., 1870, iii., 162.
[49] Lancet, 1850, i., 602.

pancreas was somewhat larger and harder than usual, and had a cavernous rupture in its anterior surface, having all the appearance of an excavated ulcer. Its cavity contained a bloody substance, about the size of a walnut, in concentric layers. On longitudinal section of the organ several of these sanguineous deposits were found, varying in size from that of a horse-bean to a hazel-nut, in appearance like aneurismal deposits. A large quantity of blood was extravasated over the left kidney. The probability of this case being rather one of aneurismal than of pancreatic hemorrhage is very strong.

Finally, the somewhat irregular case of pancreatic hemorrhage reported by Satterthwaite [50] may be mentioned. The patient, a man, thirty-six years of age, intemperate, syphilitic, had three attacks of jaundice in eight years. The last began five months before, and continued until his death. Toward the end of life he had a persistent bleeding from the lip, frequent intestinal hemorrhages, and constant drowsiness. The pancreas was distended beyond the usual size by a clot of blood. There was an extravasation of blood between the coats of the upper part of the ileum. The symptoms in this case are so different from those occurring in immediately fatal pancreatic hemorrhage, or in hemorrhagic pancreatitis, that the hemorrhage may best be attributed to the jaundice, like that from the lip and from the intestine. The pancreatic localization of hemorrhage in jaundice is exceptional, but need not be unexpected.

There remains, then, the following series of sixteen cases where pancreatic hemorrhage was apparently the sole cause of sudden and unexpected death, in persons not presenting evidence of other causes of death. Nine of them have occurred in or near Boston, and three of these are now for the first time published.

The following more detailed report of Case XV. is compiled from notes sent by Dr. Holt, of Cambridge, who made the post-mortem examination.

The patient, aged fifty-eight, was a gentleman of leisure, thin, white-haired, his body looking like that of a considerably older person. He was at a club-dinner the evening before his death.

He awoke about two o'clock the following morning, complaining of severe pain in the bowels, nausea, and great prostration. He was pale, and his pulse was very weak. He soon vomited, became collapsed, and died within half an hour.

The duodenal half of the pancreas was of a bluish red color, and was sharply contrasted with the yellowish-gray splenic end. The darker portion was infiltrated with blood, which lay in the interlobular tissue, and could be readily squeezed from the cut surface.

Nothing abnormal was found in the brain. Both sides of the heart contained a little fluid blood; the valves, cavities, and muscular substances appeared normal. The stomach was empty, and in the intestines were the products of digestion. The liver was normal in size and appearance, and the cortex of the kidneys was paler than the pyramids.

I am indebted to Dr. Williams, of Charlestown, Mass., for the notes of Case XVI., which occurred in his practice. It is included in the series, with the full recognition that it is open to criticism, since the post-mortem examination was necessarily partial and hurried.

The patient, a man, aged seventy, was a night watchman. His health had been good, and he had wholly abstained from liquor since early manhood.

In the evening he was suddenly seized with colicky pain in the epigastrium. After five hours the pain was almost constant, sharp, and cutting, extending toward the left, and downward nearly to the navel. The abdominal muscles, especially the recti, were very rigid. There was a slight, circumscribed, epigastric swelling at the left of the median line, extending from the costal margin to the navel. It was non-resistant and not sensitive to pressure, which rather relieved than increased the abdominal pain.

There had been vomiting of a yellowish fluid. The pulse was 95, regular, small, the radial and temporal arteries were rigid, the skin dry and not cool. The vomiting persisted, and in six hours the patient was collapsed, but conscious. He then became restless, the pain was less agonizing, and death took place sixteen hours after the beginning of the attack.

Dr. Williams' diagnosis was pancreatic hemorrhage.

After death he was allowed to make an incision over the tumor, and found the pancreas enlarged from the median line of the body to the splenic end of the gland. The enlarged portion was more easily cut than the rest and infiltrated with blood. On section, two or three ounces escaped into the peritoneal cavity. Slight mesenteric hemorrhages had occurred. There was no evidence of peritonitis, nor was any blood found in the peritoneal cavity before the pancreas was incised.

The following case, reported by Zenker,[51] is not inserted in the table, since it is not, strictly speaking, one of pancreatic hemorrhage, though important in suggesting the possible manner of death in this affection.

A man, aged twenty-eight, strong, very fat, and epileptic, was found dead, having been seen alive an hour before. There was a hemorrhagic infiltration in the hilus of the spleen and a venous hyperæmia of the solar plexus. The abdominal organs were strongly injected and the pancreas was fatty degenerated.

A consideration of the table on p. 203 shows that most of the individuals concerned were in their usual health at the time of the attack, or when last seen alive. They were invariably adults and usually beyond the age of forty, when the age was given. Some were conspicuously fat and strong, while a few were weak and thin. Although several were of intemperate habits, others were not so reported, and two were exemplary in this respect.

Two had complained of previous digestive disturbance, and one suffered from frequent abdominal pain. One had received a kick in the abdomen a week before death.

From the evidence here collected there is evidently nothing in sex, habits, condition, or exposure which will indicate the likelihood of pancreatic hemorrhage.

The cases and data are insufficient in number and detail to permit an exact clinical picture of this affection which shall be of especial value in a differential diagnosis.

We learn that pain was an early symptom in nearly one half of the cases; that it was usually severe, and might be intense, and was to be found in the abdomen or lower chest. Although mention is made of its presence in the epigastrium in one-fifth of the cases, this region is not conspicuously designated as the seat. On the contrary, there may be little or no pain, or merely a sense of constriction of the chest. Nausea or vomiting is but occasionally mentioned; constipation or a desire for frequent stools is still more rarely noted.

The most constant symptoms are those of collapse, and are more or less intense and more or less prolonged.

Death may take place within a half-hour after the onset of the symptoms and may be delayed for thirty-six hours. It is questionable in the latter instance whether the case should not, more properly, be included under the head of hemorrhagic pancreatitis than of pancreatic hemorrhage.

The appearances found after death are conspicuously the hemorrhage within and near the pancreas.

The gland may be of normal size, or enlarged, and its density may not be modified, or the pancreas may be flaccid, soft, and friable. The hemorrhagic infiltration is to be found in the subperitoneal tissue around the pancreas as well as in the interstitial tissue of the gland. The former may be continued into the omentum and mesentery, behind the colon and into the perinephritic fat-tissue.

[50] The Medical Record, 1875, x., 541.

[51] Loc. cit.

The entire pancreas may be infiltrated, or either half, or the central portion alone may be conspicuously involved. The hemorrhage is usually diffused, but it may be in numerous patches, both beneath the peritoneal investment and in the interlobular tissue. The color and moisture of the cut surface indicate that the extravasation is recent. It may take place into a normal pancreas or into one which is either fatty infiltrated, or fatty degenerated, or into one which shows a granular condition of the epithelium.

In a single instance evidence of an older hemorrhage was to be found in the presence of round, orange-colored bundles of acicular crystals. In the same pancreas were also to be seen colorless, acicular crystals, probably of fat, in clumps visible to the naked eye, corresponding to the appearances to be described under fat-necrosis. The microscopic examinations of one of Draper's cases showed occasional patches of hemorrhage within the lobules, although the infiltration was essentially in the interlobular tissue.

Hemorrhages might also be found in the wall of the duodenum and cæcum, and in the lungs in a single instance.

Although the splenic artery is reported to have been tortuous in one case, there is no evidence in any of a circumscribed aneurism. The splenic vein, when examined, was free from obstruction.

The conditions found by Zenker, viz., injections of the portal venous system and of the capillaries of the solar plexus, with distended and empty cardiac ventricles, were not generally met with.

Fatty degeneration and fatty infiltration of the pancreas were not necessarily present in these cases, and frequently occur without a trace of hemorrhage.

The seat, extent, and rapidity of the bleeding suggest that it is rather arterial than venous, and no evidence of venous obstruction has been found. Such hemorrhages are most likely to be of aneurismal origin, but aneurisms have not been discovered. An embolic source has been sought for in vain. It is possible that the pancreatic secretion may have corrosive properties, as suggested by Klebs, in which case the condition should occur oftener. Suggestive evidence in favor of this view is the fact, well known to demonstrators of anatomy, and called to my attention by my colleague, Dr. Mixter, that arterial injections are likely to break through and escape in the region of the pancreas.

Hemorrhages in a diseased or dead pancreas might be thus explained, but in the great majority of the cases collected there is no sufficient evidence of such disease. It is also possible that the hemorrhage may be of nervous origin, as in the pulmonary infarctions sometimes associated with cerebral lesions.

The only fact in favor of this view is the association of such pulmonary nodules with the pancreatic hemorrhages in one case. This observation, compared with the relative frequency of pulmonary hemorrhages of apparent central, nervous origin, makes the single instance of but little value as evidence.

That fat-necrosis is not a cause for such hemorrhage is obvious from its presence being suggested only in a single instance.

It is evident that the first step toward a more accurate knowledge of the immediate cause of this affection must lie in a more careful search for the actual source or sources of the leak.

Hemorrhagic Pancreatitis.—In considering the relation of hemorrhage to acute pancreatitis, it is im portant to agree upon what shall be understood by the latter term.

It has already been shown that the views advanced by Clässen and his predecessors give no aid in this matter. Klebs is non-committal on account of the paucity of evidence, and Friedreich elaborated his systematic description of acute, primary pancreatitis from the consideration of four cases. In the one pancreas were multiple abscesses; in another a bloody exudation, and infiltrated blood in the vicinity; in a third were spots of finely granular, yellow exudation with inter-lobular hemorrhage; while the fourth pancreas was gangrenous.

The material, which has been accumulating since the publication of Friedreich's article, in 1875, is already so considerable and varied as to make possible a more complete description of the subject.

The acute inflammation of a gland, from the anatomical point of view, demands the presence of degenerative changes in the parenchymatous cells, or an exudation in the interstitial tissue, or both these factors.

The first, the parenchymatous inflammation or granular degeneration of the pancreas, such as occurs in infective diseases, or as the result of mineral poisoning, is of no immediate concern. It is the interstitial variety, which, with or without associated parenchymatous changes, may be regarded as the genuine, acute pancreatitis; and it is in the interstitial tissue of the pancreas that the inflammatory exudation is to be sought. But this tissue is both fibrous and fatty, one or the other variety predominating in different individuals, and, perhaps, at different periods in life. These tissues bear a continuous relation to the peritoneum, and to the subperitoneal and retropancreatic fat-tissue. It is, therefore, most probable that an inflammatory process of this fat-tissue might arise within the pancreas, or be continued to the pancreas from some more remote place of origin. Thus a primary and a secondary, acute, interstitial pancreatitis might occur. The results in either case would be the same; the sources and progress of the disease might vary.

Whenever the anatomical evidence is insufficient to establish the diagnosis of inflammation, it is permissible to utilize the symptoms for this purpose. If the general symptoms of inflammation are present and the pancreas is described as infiltrated with blood, such an association of symptoms and lesion is rather classified among the inflammations than among the hemorrhages.

Thus Cases VIII. and XX. have many features in common; the latter, however, is tabulated as hemorrhagic pancreatitis, since it was considered clinically as a case of peritonitis from perforation. The former was placed among the hemorrhages, since the clinical picture was not that of an inflammatory process.

The series of cases which form the basis of this part of the subject naturally fall into three groups.

In the first hemorrhage is conspicuous, in the second suppuration, and in the third gangrene.

These may be designated respectively as hemorrhagic, suppurative, and gangrenous pancreatitis.

Before calling attention to the first of these groups it is desirable to exclude certain cases which have been regarded as possible illustrations of a hemorrhagic pancreatitis. Fearnside[52] reported the case of a man, aged forty-nine, not remarkably temperate, but who had enjoyed good health till within a year, since which time deep-seated pains in the region of the stomach had existed, with occasional heat or coldness in the same region, gastrorrhœa, pyrosis, constipation, pallor, and loss of flesh. For three months before death the pains became more severe and frequent, eventually constant, generally most distressing a few hours after food. Three days before death a sudden excruciating pain occurred, followed by jaundice and a dark-brown vomit. On the following day there was intermitting vomiting, and frequent hiccough. On the day of his death he was collapsed, although his intelligence was good. The epigastric pain was severe, and on pressure between the navel and the ensiform cartilage a deep-seated transverse tumor could be felt. The pancreas was four times the normal size, and was adherent to the stomach by some firm adhesions. The neighboring peritoneum showed spots of soft and firm exudation. The greatest increase in size was in the head, which extended deeply into the right lumbar region. It

[52] London Medical Gaz., 1850, xlvi., 967.

was blackish-brown, pultaceous, grumous, and contained distinct blood-clots. In the more consistent portions there was no trace of natural gland-tissue. The body was firm and close in texture, of a dark-red color mottled with black lines and points, and became paler toward the lip.

The probability of this being a case of malignant disease with hemorrhage is very strong, especially as the appearances do not correspond with those to be stated later as found in hemorrhagic pancreatitis.

Rigal [53] reports the case of a man, aged fifty-two, previously in perfect health, who suffered for seven days from intermittent fever, daily, with short remissions. The abdomen and legs then became swollen, and some pain was complained of at the right of the navel, where was a sensitive, indurated spot. Jaundice then occurred, also progressive weakness, and epistaxis. Finally fever was noticed, and death took place about seven weeks from the beginning of his sickness. The pancreas was large, the head being twice the normal size. The latter was brown, both on inspection and section. On microscopic examination there was advanced fatty degeneration, and numerous crystals of margarine were seen. There was also fatty degeneration of the right kidney, and an enlarged and friable spleen. The liver was normal in size and consistency, the bile-ducts and gall-bladder were dilated.

This case is excluded from the list which is to follow, from the inability to determine the nature of the changes in the head of the pancreas. At the same time it is admitted that certain characteristics are presented which render it not unlikely to have been an instance of the disease under consideration.

The case reported by Huber [54] must be excluded from those of hemorrhagic pancreatitis. His patient died within twenty-four hours after the onset of an attack of severe epigastric pain. There was a tumor of the head of the pancreas surrounding the common duct, which was passable. The tumor descended into the mesentery. It looked like Förster's carcinoma simplex, but had many pigmented and hemorrhagic spots.

The case of pancreatic hemorrhage reported by Challand and Rabow [55] is also not wholly clear with reference to its relation to pancreatitis.

The patient, sixty-two years of age, an insane woman, and inmate of an asylum, had an ovarian cystoma for several years.

She was found at bedtime pale, and groaning feebly, without known cause. The next day she was collapsed. She complained of suffering, especially in the lumbar and epigastric regions. The pain was not increased on pressure, and there was repeated vomiting. She remained in a condition of extreme weakness, with frequent vomiting and groaning, a quick pulse and a subnormal temperature, till her death, on the fourteenth day. The pancreas appeared doubled in size. On tearing its tissue a certain quantity of thick, black blood escaped. In making a longitudinal section, a cavity as large as the fist was opened, filled with large, black clots. The pancreatic tissue was dark brown, and so softened and friable that it was impossible to determine the point of origin of the hemorrhage. The duct was moderately dilated, and the tissues in the immediate vicinity of the gland were strongly discolored with blood.

This case is not included among those of hemorrhagic pancreatitis, since the described appearances do not correspond with those usually found, and the possibility of a pancreatic cyst or of an aneurism is not eliminated.

The list of sixteen cases shown in table on p. 203 includes the instances of associated pancreatic hemorrhage and inflammation which present common features of symptoms and anatomical changes. Of these cases three have occurred within the vicinity of Boston; two of these are now, for the first time, reported, and the gross and microscopic specimens from the latter are submitted to your inspection.

I am indebted to Drs. Pinkham and Whitney for their notes of Case XXVIII. The patient was a man, forty years of age, by occupation a caterer. He was liable to attacks of acute indigestion, and, for a year or more before his death, had suffered from general malaise and debility. His discomfort was attributed to indigestion. His last illness was of six days' duration, and was characterized by epigastric pain, vomiting, and by great cardiac weakness. Death occurred from heart-failure after the pain and vomiting had ceased.

There was a large quantity of abdominal fat, and the post-mortem examination was negative, with the exception of the appearances described below. The pancreas was very large, weighing, with some adherent fat, four hundred and ten grammes. The cut surface showed everywhere dark-red streaks and patches between the lobules, and separating them to a slight degree. On microscopic examination there was no evident alteration of the gland-cells. A considerable quantity of free blood-corpuscles was found in the intra-lobular tissue. The fat-tissue was everywhere filled with small, opaque-white spots, often with a well defined, dark border. Their diameter varied from a few millimetres to several centimetres. They were present within the pancreatic fat-tissue and in that outside the organ. Microscopic examination showed that the fat-tissue was changed to a finely granular mass in which were numerous very fine acicular crystals. In the vicinity of the patches of necrotic fat-tissue were found colonies of micrococci.

For the purposes of this paper a more extended microscopical examination has been made of the above pancreas.[56]

There is an extensive inter- and intra-lobular infiltration of fat-tissue. The inter-lobular fibrous tissue is increased in places, and the contained duct is widely dilated. The pancreatic lobules are, at times, diffusely stained of a brownish-yellow color. Certain lobules contain clusters of orange-colored, acicular crystals, especially in the vicinity of the fat-tissue. The inter-lobular fat-tissue shows circumscribed, as well as diffused, hemorrhagic infiltration. There is, in addition, an excessive accumulation of round cells, in places wholly cellular, again fibrino-cellular, entirely replacing the fat-tissue. There are sharply defined islets of fat-tissue in which the individual cells are indistinct, without nuclear staining, the whole filled with acicular fat-crystals. The border is often sharply defined by a zone, in which are small, round clumps of orange-colored, acicular crystals, and outside of which a line of round-celled accumulation is frequent. Bacterial clumps and venous thrombi are present.

The described changes in the inter-lobular fat-tissue are likewise seen in the parapancreatic fat. The following is the history of Case XXXIII., for the notes of which I am indebted to Drs. J. J. Putnam and Whitney. The patient was a gentleman, forty-eight years of age, who had been hemiplegic for several years. He was well-nourished but not excessively fat. He had suffered from several attacks of pain in the region of the stomach, with chilly sensations, from which he recovered in the course of twenty-four hours. They were usually attributed to indigestion, but no exciting cause was ever discovered. He had one severe attack of this sort a year before his death, and became collapsed, and was covered with cold sweat. His mind was dulled and his talk somewhat incoherent. He rallied under the use of stimulants, and in the course of a day or two appeared in his usual health.

At 5 A.M. he was seized with a severe stomachache, and a few hours later vomited, with temporary relief to the pain. Throughout there was considerable dull epigastric pain, and occasional nausea and vomiting. In the

[53] Gaz. des Hôp., 1869, xlii., 562.
[54] Deutsches Arch. f. klin. Med., 1875, xv., 455.
[55] Bull. Soc. Méd. de la Suisse Romande, 1877, xi., 345.

[56] Unless otherwise specified, the sections from the specimens hardened in alcohol are made with a microtome, stained in hæmatoxylin, carmine, or aniline blue or brown, dehydrated, and mounted in glycerine or balsam.

Sixteen Cases of Pancreatic Hemorrhage.

No.	Authority.	Sex.	Age.	Antecedents.	Symptoms.	Lesions.
I.....	Spies, I: Schmidt's Jahrb., cxxxiv., p. 270. 1867.	M.	Adult.	.....	Sudden death.....	Extensive inter-lobular, pancreatic hemorrhage, and considerable hemorrhage behind the pancreas and spleen, between the peritoneum and abdominal wall.
II.....	Klebs: Handb. d. Path. Anat., pp. 1, 2, 555. 1870.	....	.....	.....	Unexpected death.....	Extravasation of fresh blood in the pancreas, no interstitial inflammatory changes, no thrombosis of large vessels near pancreas.
III.....	Zenker: Deutsche Zeitschr. f. prakt. Med., ii. p. 351. 1874.	M.	48	Very fat. Heart disease in early life. Previous pulmonary disease. Three years ago slight digestive disturbance.	Awoke suddenly at night: unwell, desire to defecate, got out of bed, slight tendency to vomit. Returned to bed. Immediate death.	Entire pancreas of an intense, bloody color, and so fatty infiltrated that only fatty detritus was visible. Slight cardiac aneurism, not in such a condition as to be accused of causing sudden death.
IV.....	Zenker: Loc. cit.....	M.	.....	Drunkard	Found dead in the water. Well on the same day.	Hemorrhagic infiltration and fatty degeneration of the pancreas.
V.....	Maynard and Fitz: MS. Notes, v., p. 26. 1875.	F.	Adult.	In usual health.....	Sudden pain in lower chest. Hurried respiration, feeble pulse. Death in a half-hour.	Thin, flaccid pancreas, with slight subperitoneal and intra-glandular hemorrhages. Cut surface dotted with white specks. Extensive fatty degeneration of gland-cells. Fat-crystals and blood-crystals. Nothing abnormal in cœliac plexus.
VI.....	Kollmann: Aerztl. Intell. Bl., xxvii., p. 427. 1880.	F.	Adult.	Mitral stenosis. Pleurisy in left chest. Frequent abdominal pain. Able to work.	After a hearty meal frequent solid dejections. Restless and anxious at night. Cold. Sense of constriction in chest. Ate breakfast with appetite. Died suddenly while walking with companions.	Injected pancreas surrounded as far as the spleen with extravasated blood. Hemorrhage in mucous membrane of the duodenum. Four hundred grammes of yellow fluid in left chest; one hundred grammes in the pericardium. No appearance of fatty degeneration of the pancreas.
VII.....	Gerhardt: V. Kollman, loc. cit.	F.	47	Bronchial catarrh, emphysema, anasarca, ascites, albuminuria, cyanosis.	Died in collapse.....	Inconsiderable inter-lobular pancreatic hemorrhage. Tissue behind pancreas, as far as the spleen, infiltrated with blood. Duodenal mucous membrane almost black, and peritoneum over its convexity infiltrated with blood. Ecchymosis in mucous membrane of cæcum.
VIII....	Reynolds and Gannett: Boston Med. and Surg. Jour., cxii., p. 275. 1885.	M.	66	Abundant fat tissue	Suffered from epigastric pain and constipation. Felt better on the next day, but in the evening found pulseless and collapsed. Death within thirty-six hours from the attacks of pain.	Pancreas enlarged one-half. Consistency diminished. Cut surface reddish black from much extravasated blood nearly uniformly distributed. Blood-vessels and pancreatic duct unaltered.
IX.	Draper: Trans. Asso. Am. Phys., i., p. 143. 1886.	M.	45	Strong, rugged. Drunk at long intervals.	Found dead in a chair, as if asleep. Seen well within forty-eight hours.	Pancreas infiltrated with and surrounded by extravasated blood.
X.....	Draper: Loc. cit.....	F.	44	Addicted to liquor, though rarely drunk.	Found dead in bed, to which she went dressed, complaining of a headache. Seen well within thirty hours.	Pancreas infiltrated with blood. Moderate retro-peritoneal hemorrhage. Eight ounces of thin, red fluid in the peritoneal cavity.
XI. ..	Draper: Loc. cit.....	F.	26	Very fat; intemperate. Kicked in abdomen a week before death, but afterward appeared in usual health.	Went to bed complaining of great abdominal pain. Some hæmoptysis. Fourteen hours later cold, pale, pulseless. Mind clear. Complained of intense abdominal pain and of thirst.	Pancreas enlarged, sodden, soft, and slimy, filled with effused blood. Infiltrated blood behind mesenteric peritoneum, behind and below stomach, between stomach and colon, over right kidney. Twenty-two ounces of thin, red fluid in abdomen. No peritonitis.
XII. ...	Draper: Loc. cit.....	M.	55	Exemplary habits	Well in the morning. Cramps in the forenoon. Found dead eight and one-half hours later.	The abnormally large pancreas uniformly infiltrated with fresh blood. Subperitoneal tissue of each side of the pancreas, for about two inches, filled with blood.
XIII. ..	Draper: Loc. cit.....	M.	31	Intemperate	While in good health, sudden epigastric pain, nausea, collapse, and death in forty-five minutes.	Pancreas and adjacent tissue infiltrated with blood; with microscope granular gland-cells, and blood in interlobular tissue.
XIV....	La Fleur: Medical News, liii., p. 80. 1888.	M.	50	Obscure dyspepsia for several years.	Severe epigastric pain, vomiting, collapse. Death in twenty-four hours.	Pancreas doubled in size, dark-red, firm. The cut surface mottled with capillary hemorrhage, separated by a grayish-red, translucent material. Fatty degenerated tubules and acini. Cellular tissue around pancreas blood-stained.
XV.....	Driver and Holt: MS. Notes, v., p. 52. 1888.	M.	58	At a dinner party the night before his death. Thin.	Awoke at 2 A.M. with severe abdominal pain, nausea, weak pulse, and prostration. Speedy vomiting, collapse. Death within one-half hour.	Duodenal half of the pancreas infiltrated with blood. Each side of the heart contained a little fluid blood.
XVI....	Williams: MS. Notes, v., p. 55. 1888.	M.	70	Thin; temperate. Always well.	Sudden epigastric pain, vomiting, weak pulse, slight epigastric swelling, collapse in a few hours, and death in sixteen hours.	Tail of pancreas infiltrated with blood. Slight mesenteric hemorrhage. No evidence of peritonitis.

evening, immediately after vomiting, he suddenly became collapsed. There was constant pain throughout the night, and restlessness. During the second day he improved somewhat, although annoyed by hiccough. He vomited chiefly mucus, in which were found several small dark-red lumps about the size of peas.

Early in the third day he was very restless, cold, and livid, his breathing rapid, and his pulse almost imperceptible. He was conscious but anxious, and died within six hours after the collapse became extreme.

The pancreas was about twice the normal size; on section, of a dark-red color mottled with opaque-white spots and patches, which lay between the lobules of the gland. These changes were most marked in the body of the gland, the head being relatively normal. The fat-tissue near the pancreas, that in the root of the mesentery, and in the meso-colon near the spleen, was of a dark-red color. In places it was soft, discolored, and foul-smelling. Numerous opaque, grayish-white spots were visible beneath the mesenteric peritoneum. The splenic vein contained a soft, dark, adherent thrombus which was continued into some of the pancreatic veins. Recent thrombi were also found in some of the mesenteric veins. The spleen was slightly enlarged, the pulp increased and dark red.

There was no infiltration in the vicinity of the solar plexus and semilunar ganglion.

There was no evidence of a peritonitis.

In the microscopic examination of the hardened pancreas there is seen a sharp differentiation of the section into three zones.

The intermediary zone represents the inter-lobular fat-tissue which is continuous with that around the pancreas. It is not only extensively infiltrated with blood, but is often transformed into a porous structure from the apparent destruction of fat-cells. Elsewhere it contains a fibrillated meshwork, finely granular material, bacteria, and numbers of acicular fat-crystals. There is also an occasional round-celled infiltration of this fat-tissue between the relatively normal portions of the pancreas and the hemorrhagic and necrotic inter-lobular fat-tissue.

On the one side of this intermediary zone the acini are distinctly defined and the nuclei clearly stained. Occasional lobules are seen with granular epithelium and indistinct nuclei. There are, in places, an intra- and inter- lobular infiltration of blood-corpuscles and numerous accumulations of round cells. The inter-lobular tissue shows a fibrillated meshwork, apparently clotted fibrine; in the smaller ducts are numerous leucocytes.

On the other side of the hemorrhagic zone, although the lobules are distinct, the borders of the acini are often confused. The cells are granular, frequently not differentiated, and there is no staining of the nuclei. At times

the lobules are replaced by a granular detritus, or the cells are widely separated from each other. Here and there among these necrotic acini are stained islets, apparently bacterial colonies, thrombotic veins, and, more rarely, small accumulations of round cells. At the edge of the pancreas is a large venous thrombus containing innumerable bacteria.

Of the seventeen cases of hemorrhagic pancreatitis fourteen were males and two were females, the sex of one person not being stated. Their ages were as follows: —

Years of age.	Number of cases.
From 25–30	1
" 30–35	2
" 35–40	1
" 40–45	4
" 45–50	1
" 50–55	1
" 55–60	2

One was described as a young adult, two as adults, and nothing was stated concerning the age of two.

The patients were usually in good health at the time of the attack, a few of them being conspicuously strong and robust. Nearly one-half of them were abundantly or superabundantly provided with fat-tissue.

A small fraction, nearly one-sixth, was addicted to the abuse of alcohol. Nearly one-half of the cases suffered from previous attacks of indigestion. These attacks were usually characterized by pain which was colicky, gastric, or abdominal, and so severe in one instance as to suggest impending perforation. Vomiting, either watery or bilious, or both, was noted. Nausea, belching, and diarrhœa were recorded. Jaundice occurred in a single instance.

It is obvious from the above statement that the previous digestive disturbances were rather gastric, or gastro-duodenal, than enteric. The immediate attack began, in the great majority of cases, with abdominal pain, usually without known cause, though rarely some irregularity in diet appears to have been an immediate predecessor. The pain was violent, intense, or severe, either constant or paroxysmal. Its seat was usually in the upper abdomen, and, in one instance, was stated to have followed the course of the pancreas; subsequently, in one-fifth of the cases, the abdominal pain became general. The initial pain was usually followed by vomiting, more rarely by nausea alone. In one case there was a conspicuous record of no vomiting. The vomiting was constant, repeated, or occasional. It might be copious. It was bilious at times, or black, and contained, in one instance, dark-red clumps the size of peas.

Constipation was a symptom of frequent occurrence, and a diagnosis of intestinal obstruction was made in three instances, in one of which laparotomy was performed. The occurrence of diarrhœa was noted in but one case. Hiccough and albuminuria each were reported in a single case.

Fever was an inconstant symptom. When present it was of early occurrence, and might be high on the second day. On the contrary, the temperature might be normal on the first day and subnormal on the following day. Delirium was present in three cases.

A tympanitic swelling of the abdomen was of no infrequent occurrence. It was usually general, or in the upper abdomen, and was generally localized in the lower abdomen. In one case, thought to be of intestinal obstruction, a swollen intestinal convolution was to be felt in the right side.

Symptoms of collapse were almost invariably present, and usually directly preceded death.

This occurred as follows:

On the 2d day in	3 cases.
" 3d "	5 "
" 4th "	3 "
" 5th "	2 "
" 6th "	1 "

It took place after a few or several days, each in one case. The diagnosis lay between intestinal obstruction, perforative peritonitis, and an irritant poison. The pancreas was found enlarged, either throughout or at one extremity, usually at the head. The gland was frequently doubled in size, and might seem still larger when abundant fat-tissue was present. The enlargement has been compared to the size of a man's arm. The gland was generally dense, sometimes friable, and has been noticed to be of diminished consistency. The existence of hemorrhage was usually suspected by the appearance of the surface, which is of various shades of red. On section, however, the color may be dark-red, reddish-brown, violet, reddish-black, or even black. The modification in color may be uniformly distributed, or lie in patches, or in specks. The patches correspond with nodules which may project above the surface. These discolored patches may show white specks or streaks, and the red color may lie in the inter-lobular tissue of the pancreas.

The color of the section may be affected by the presence of associated alterations, one of which is accidental, the other may be incidental. The former is due to an excessive quantity of fat-tissue in the pancreas, sometimes appearing to form nodules as large as hazel-nuts, and to treble the size of the gland. Bands and spots of a translucent yellow are thus produced which are mottled with shades of red. The incidental appearance is due to the presence of opaque-white specks, spots, and streaks, which are generally known, since the publication of Balser's[87] article, by the term fat-necrosis. These were seen in six of the cases, and it is not improbable that the granular exudation described by Löschner may have been of the same nature.

The pancreatic duct may contain a bloody, ichorous fluid, and its branches may be plugged with clotted blood. The duodenum and jejunum may show swelling, injection, and ecchymosis. The hemorrhagic infiltration may be found beyond the pancreas, both in the parapancreatic tissue, mesentery, meso-colon, and in the omentum. It may extend downward behind the descending colon, nearly to Poupart's ligament, and may be found at the outer border of the left kidney. The splenic artery and vein are usually free from changes. The latter may contain a thrombus. The portal vein has been found free from thrombosis. The condition of the other organs is essentially negative. The heart may contain liquid blood, or a differentiated clot may be found in the right ventricle. The spleen may be small, with wrinkled capsule, or it may be slightly enlarged and injected.

The Agency of Drinking-water in the Causation of Cholera.—In a report of Chief Engineer F. G. McKean, U.S.N., on the Takashima coal mines of Japan, reference is made to the means taken to prevent cholera by the use of distilled water. He reports that until the last year cholera appeared regularly on the island (Takashima), and made great ravages in its dense and peculiar population. It is stated that during ten days of 1885, nine hundred persons died of the disease, so that it became necessary to construct special furnaces for burning the dead. It was suspected that the germs were in the water brought from the mainland for drinking purposes, and hence the distillers were put in operation, and stringent orders issued that the water from the mainland was only to be used for washing purposes. Last year there were no cases of cholera on Takashima, though it raged on the neighboring islands, and the immunity is affirmed to be due to the purity of the drinking-water.

An Indian Coroner's Verdict.—The following coroner's verdict is in print, apparently a specimen of Baboo English, that is, English as written by a native of India. This was rendered upon an ill-fated Hindoo. "Pandoo died of the tiger eating him; there was no other cause of death. Nothing was left except some fingers, which probably belonged to the right or left hand."—*Boston Medical and Surgical Journal.*

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[87] Loc. cit.

Original Articles.

SOME OF THE ABUSES OF ETHERIZATION.[1]

By GEORGE F. SHRADY, M.D.,

NEW YORK.

MANY points connected with anæsthesia have come up from time to time before this Society, and there has appeared such a disposition on the part of some members to discuss them that it has occurred to me that an opportunity for so doing might be afforded by a few general remarks on the abuses of etherization.

Notwithstanding etherization is so extensively practised, much is yet to be learned concerning many of the simple details of its administration. Especially is this the case with matters which bear upon the comfort and safety of the patient, and upon his subsequent state of health. In what is to be said, it must not be understood that there is special need for emphasizing precautions or formulating rules for members of this Society, whose large experience in hospital work is a guarantee against accident or carelessness, but as a result of the saying, some good may come to those who may wish to know what is believed to be the safe and accepted method of the present day. In other words, it may be interesting to know what experience has taught us to do, and what to leave undone in many of the various conditions which govern anæsthesia. Let us premise by asserting that we shall confine our remarks exclusively to the abuse of ether, leaving for the present, at least, chloroform entirely out of the question.

Ether is generally believed to be a safe anæsthetic. While this is in the main true, it is equally true that on this account we are often given to use it quite recklessly. The English characterize the American method of administering ether as rude, dangerous, and oftentimes actually cruel. They speak of it as the drenching plan. This criticism is founded on a great deal of truth.

In one of the larger hospitals of this city, for a long time, there was hung in the consulting-room a graphic picture of the struggle in "getting a patient under ether," at least that was the title. To the unsophisticated eye it suggested a lively rough and tumble scramble to get the poor patient under the numerous attendants. There was such a confusion of flexed elbows, crooked knees, bent backs, bowed heads, climbing postures, and flying coat-tails, that it was difficult, except for his presenting foot, high in air, to make out which end of the poor victim was at the head of the table. Every one who had never been anæsthetized in this way smiled when he looked at it. To any patient who had been through it all, there was the keen appreciation of the desperate goneness of the underdog in a fight. Every one has seen the original battle in progress, but as the poor laid-out dog generally comes out alive the smothering scene becomes merely an amusing part of the play.

So many patients have complained of the immediate and after-effects of such treatment that it appears almost a conscientious duty on my part to speak for them. It is impossible, within a given compass of time and space, to do more than refer to the sufferings, suspense, shock, and even agony of fear which they have endured during these ordeals. But there is scarcely a surgeon who has not heard similar experiences. In nothing is the grim doctrine of being cruel to be kind, more strikingly exemplified as in instances of what is now termed rapid anæsthesia.

In some general remarks upon the abuses of anæsthesia, what grow out of them, and their remedy, I am convinced that we cannot go far out of the way in introducing the rapid or drenching method as the head and front of the offending. What I mean by the rapid method is this: When everything is ready for etherization to begin, the sponge is saturated with ether, and the cone or inhaler crowded upon the patient's mouth and nose, and forcibly held there until the struggling ceases and the patient becomes quiet. It is a simple smothering process from beginning to end. It is not difficult to assume that this is all wrong, and that the only possible excuse for it is that it saves time. Against the latter is oftentimes weighed many of the distressing sequelæ of shock, which we see even years after the anæsthesia has been experienced.

In the category of shocks of anæsthesia the crowding method takes a first place. Nothing can be more demoralizing than to choke a patient suddenly and forcibly with an irritating vapor, without the chance of an appeal for a single breath of fresh air. All the sensations of actual impending asphyxia are present of necessity. Natural breathing is almost as effectually shut off as if the head were held under water.

It is not contended that the pure vapor of ether cannot be breathed with safety; but the time for proving it is not with suddenness and when the lungs are mostly filled with residual air. It is on account of the latter condition of things that nature rebels in desperate struggles against the sense of suffocation. The residual air is five or six times more than the respiratory tide, and is thus completely shut in, and partially charged as it is with gases that should have a ready escape. It is this anomalous state of affairs which doubtless gives rise to those reflex struggles for breath which are remembered by patients with so much horror long after the other experiences connected with the operation are forgotten.

How much more rational it is to allow the lungs to empty themselves of the residual air by a gradual process of forced expiration. The latter means keeping the sponge from direct contact with the face until the ether vapor takes the place not only of the respiratory tide but of the residual air. This method not only encourages the patient to breathe easily, calms his fears, and reduces the shock, but has a tendency to mitigate, if not to absolutely control, those reflex muscular excitabilities, which in the shape of tetanic spasms of the respiratory muscles—cough and vomiting—are so apt to interrupt and endanger an otherwise peaceful sleep.

As soon as the ether vapor occupies the lungs, and when primary anæsthesia occurs, the cone or other apparatus can be brought in contact with the face. The patient then breathes without difficulty the denser ether vapor. This is what may be called the gradual and rational method, the only so-called lost time being the period before primary anæsthesia is established.

It might appear to be absurd under the circumstances to dwell on the advantages of the latter procedure were it not for the fact that the rapid-drenching, struggling, method is the one most in vogue with the junior assistants in our hospitals.

And this leads me to refer in passing to these gentlemen in connection with some of the abuses we have to consider. They are generally juniors, almost always inexperienced, and therefore quite self-confident. It is not so much their fault as it is that of the men who should teach them their duties. It is notoriously true that no responsibility of equal importance is more lightly considered and less preparation made for it than that connected with the administration of an anæsthetic. By the time a young man learns passingly well to give ether, his place is taken by a fresh hand, and so on, term after term, and year after year, until the operator, constantly annoyed by interruptions and threatened accidents, accepts the situation as one which apparently admits of no easy remedy.

Very many of the abuses of ether are chargeable to faulty administration of the drug. They begin wrongly and generally end wrongly. I say it in all meekness of spirit, for many a time have I been quietly rebuked by the amused surprise of members of my hospital staff when I have offered a criticism on what, from a traditional standpoint, they consider a very unimportant matter.

[1] Read at a meeting of the Practitioners' Society of New York, January 4, 1889.

As if to atone for carelessness and inattention during the administration of the drug, they are more than ready to abuse the patient by fussiness and over-concern regarding trivial occurrences. Then comes in the sin of commission to atone for that of previous omission. Let the patient miss a respiration or two, the jaw is pushed forward, or the tongue pulled out, or the chest punched for artificial respiration. All of which is as unnecessary as the constant caressing of the eyeball, or the forcible, almost brutal, control of the muscular jerkings of the patient. In the vast majority of cases, if the patient is carefully and evenly kept under ether, the less he is meddled with the better, and the less force that is used upon him the less trouble he will give and the better he will be afterward.

Aside from keeping the patient the shortest possible time under ether, there is nothing of more importance than the steady and even method of its administration. The administrator should watch his patient as carefully as does the engineer his engine, and should appreciate the slightest indication of a faulty stroke or irregular pressure. The difference between this and the interrupted method is that between the results of a refreshing sleep as contrasted with the grim experiences in fighting a nightmare. As a consequence, the shocks are diminished all along the line. A steady strain is always born better than a succession of jerks. Everything should be done to keep the patient quiet. Even the reflex muscular movements should be passively rather than actively controlled. Nothing tends to excite a patient more, when partially under ether, than to use direct force in restraining him, or in speaking harshly to him. In fact, it is a good rule for the operator and assistants never to indulge in any conversation during the partially insensible period of the patient, as the hearing is the last sense to succumb to the narcosis.

When full anæsthesia is established and the condition is carefully maintained the patient is apt to remain quiet during the entire operation giving the assistants but little trouble. It is oftentimes the unnecessary interruptions which grow out of officiousness of attendants which prove the exceptions to the rule. There are many phenomena that mean nothing, which are incidents rather than accidents, but which are constantly magnified into undue importance. For instance, nothing is more common than a complete stoppage of respiration for an instant just before complete anæsthesia occurs. This is so apt to alarm the novice that he is inclined to punch the patient's chest, forcibly pry open the clenched teeth, slap his face, and hurriedly go through with efforts at artificial respiration. If he waits a few seconds and gives the patient a chance there will be a full inspiration, and the respiration will go on as easily and naturally as before.

Most of the abuses attending anæsthesia are occasioned by carelessness on the part of the administrator in either giving too much or too little of ether. But in spite of good judgment and care, more or less trouble sometimes ensues. Many patients bear ether badly, and in operations of emergency we cannot select our cases. Bronchorrhœa is oftentimes very distressing, even with patients who have no lung trouble. But even this condition is modified and mitigated by an easy and uninterrupted administration.

A few words may be said here in regard to the prevention of the real accidents in connection with mechanical arrests of respiration.

Vomiting is always a bugbear. There are apparently no rules for its prevention. Patients with full stomachs and with empty stomachs alike suffer from it. The rule is always to have the stomach empty before etherizing. The possibility of food lodging in the trachea is always to be borne in mind, but this accident very rarely occurs. I have often been compelled to operate upon a patient after he has had a full meal, but never experienced more than a temporary trouble from vomiting. Simply lowering the head and turning it to one side are all that is required. After this the disposition to further vomiting is often prevented by deepening the anæsthesia.

Whenever anything unnecessary is done for a patient who is helpless it amounts to an abuse of the situation. When we consider it from such a stand-point there are more abuses than we can count on our fingers within the decimal range.

Patients complain of sore cheeks and necks for days after the operation, because the administrator, for perhaps an hour at a time, had been bracing his thumbs against the angles of the jaws in the fear that the epiglottis might elude his vigilance and shut up shop, or that the unruly tongue might dodge too far backward into the pharynx. This constant bracing of the jaws is one of the recognized accomplishments of the anæsthetizer. It has the portentously calm assurance of readiness in prospectively dreadful emergencies. The patient, in fact, appears to be safe against any accident so long as the thumbs of the man at the helm hold out. In truth, whatever can be done in pushing forward the lower jaw can be done quickly, effectively, and without force. The same may be said in regard to pulling out of the tongue. When that organ is curled backward so as to impede respiration it can be gently drawn forward for an instant, and that is all sufficient. Traction on the tongue has less good effect than is generally supposed. The action is limited by the frænum in front and the anterior faucial pillars behind, and is only useful when the dorsum of the organ is curled upon itself and when there is a general relaxation of the sublingual muscles by a flexing forward of the chin. Generally under the latter conditions the simple elevation of the chin and extension of the neck will promptly relieve the patient and save his tongue from the stretching and scraping of clawed forceps. In connection with this point it may be interesting to refer to some recent experiments of Dr. Benjamin Howard, of London, by which he attempts to establish a simple and available method of elevating the epiglottis by forcibly extending the neck and head backward. He claims that by this means the hyoid bone, the attached hyo-epiglottic ligament, and the genio- and myo-hyoidean muscles become fixed points, when the epiglottis irresistibly moves upward and the entire pharynx becomes enlarged throughout. I have not had occasion to try this method, but refer to it in passing as possibly affording assistance when other means may fail.

In considering the immediate and after effects of ether, the fact cannot be too strongly impressed that, all other things being equal, the less we give of the drug, and the shorter the period of profound anæsthesia the better. A patient should not be any longer under its full influence than is actually required for the performance of the really painful part of an operation. The lack of this precaution in subjecting the patient to an extra shock has sometimes led to fatal results which have been unjustly laid to ether. On the other hand, there should be no excuse, short of actual danger to life, for allowing the patient to suffer any pain during the operation.

There is often considerable difficulty in anæsthetizing patients who have been addicted to alcoholic stimulants. They are more apt to be violent and rebellious under restraint, and a longer time is usually required for anæsthesia to declare itself. In such cases it is well to administer an hypodermic injection of morphine ten or fifteen minutes previous to etherization. Under these circumstances the patient comes not only more quickly under the anæsthetic, but the effects of the latter are prolonged by the morphine. In fact, a proportionally less quantity of ether is required, especially during the less painful parts of an operation, and not unfrequently the ether can be dispensed with altogether, the morphia taking its place. This is of especial value in lengthy operations, in which it is necessary to reduce the shock of anæsthesia as much as possible. This mixed narcosis is also of great use in those cases which, by frequent operations, have developed a tolerance for ether. This latter condition was strikingly illustrated in a case in which twenty-two etherizations were necessary for

a series of plastic operations performed at different times during a period of three years. In that instance, without morphine, nearly a full hour was required, while but half that time was consumed when morphia was used.

It is not the purpose of these remarks to refer in detail to many of the disagreeable sequelæ of anæsthesia, which last for varying periods after its administration. Among these may be simply mentioned protracted nausea, more or less persistent bronchorrhœa, headache, giddiness, suppression of urine, and choreic symptoms. Aside from proving that ether is a powerful drug, their occasional occurrence emphasizes the great importance of care and limit of time in its use. It is well conceded that etherization is sometimes dangerous when albuminuria exists, or when there is embarrassed respiration the result of empyema, and in some forms of heart trouble, and that very often, choreic symptoms occasioned by etherization last for months afterward. I am convinced that most of these sequelæ are due to careless or too heroic etherization.

While it is fair to assume that ether is a safe anæsthetic, the exception to the rule obtains much oftener than is reported. Every surgeon finds himself from time to time in a very tight place, in spite of the greatest care on the part of the administrator. It is only the conventional idea that a patient has no business to die under ether that allows the fact of an accident to go by default. It is mentioned casually, perhaps, but that is all. We have all been there and gone on. Under such circumstances each operator has his own methods. Personally, aside from straightening the tongue and opening the glottis by closing the mouth and gently pressing the lower jaw forward, I believe in the efficacy of inversion of the body and judicious attempts at artificial respiration. I have occasionally used nitrite of amyl, by inhalation, with striking benefit, but have never seen a case in which I was willing to try the galvanic battery. I have an impression, shared by many others, that the battery, as a rule, does more harm than good.

In order to avoid many of the abuses of anæsthesia, to which we have referred, we may offer the following conclusions, upon which a fuller discussion may profitably turn:

1. In commencing the administration of ether the gradual method is to be preferred.
2. Its employment allows the lungs to empty themselves of residual air, prevents coughing and struggling, and places the organs in the best possible condition to receive and rapidly utilize the ether vapor.
3. After the stage of primary anæsthesia is reached, the more pure ether vapor the patient breathes the better.
4. The shorter the time of anæsthesia, and the smaller the amount of ether used, the less likely are the unpleasant sequelæ to occur.
5. The more evenly it is administered the less shock to the patient.
6. Anæsthesia should be entrusted to experienced administrators only.
7. Many of the fashionable efforts to resuscitate patients are not only useless but harmful.
8. The minimum amount of force should be employed to restrain the muscular movements of the patient.
9. Mixed narcosis is often advisable for prolonged operations.
10. The utility of the galvanic battery, in threatened death, is yet to be proven.
11. The most trustworthy means of resuscitating desperate cases are artificial respiration, hypodermic stimulation, inhalation of nitrite of amyl, and inversion of the body.

247 Lexington Avenue.

The Therapy of Tuberculosis.—The fund for promoting the study of the treatment of tuberculosis, which is being raised in France, amounts now nearly to fifteen thousand dollars.

A REPORT OF FORTY-TWO CASES OF INTUBATION AT THE WILLARD PARKER HOSPITAL, NEW YORK CITY.

By F. K. PRIEST, M.D.,

resident physician.

In a series of two hundred and sixty-six cases admitted to the Willard Parker Hospital, intubation was performed for the relief of laryngeal stenosis, in forty-two, or a little over twenty-two per cent. of that number, with a percentage of recoveries of 26.19.

The majority of these cases were of undoubted diphtheria, with well-marked symptoms of laryngeal stenosis, at the time of admission, while many of them had been without proper care or medical treatment and were well-advanced in the last stages of septicæmia, the operation being performed merely for the relief of the stenosis, with no hope of ultimate recovery.

Of the forty-two cases eight were cases of diphtheria complicating or accompanying other contagious diseases, as follows: one case of measles and diphtheritic conjunctivitis; one of varicella; and six of scarlet fever.

In thirty-five of the forty-two cases membrane was present in the throat or anterior nares, or coughed out either before or after the introduction of the tube; in the seven remaining cases, the presence of membrane was not detected at any time during the course of the disease, although there was more or less swelling of the cervical glands with discharge from the nostrils. Only one of the seven recovered.

On admission in twenty-nine cases, the symptoms of laryngeal stenosis were well advanced, twenty-five of this number being unquestionably diphtheria, and one case in which the presence of membrane could not be detected, a large piece was coughed out during the introduction of the tube. In five cases there was a hoarse, croupy cough without dyspnœa, and in eight the laryngeal symptoms developed after admission.

In all cases where the character of the dyspnœa and the general condition of the patient permitted of the delay, intubation was not resorted to until other means for the relief of the stenosis had been tried and failed to give more than temporary relief.

In three cases only, where the urine could be obtained, albumin was not found on examination, several dying from acute nephritis with suppression of urine, as occurred once five days after the removal of the tube, all local evidences of diphtheria having disappeared at the time. This one has been included in the list of fatal cases, as the patient was not discharged from the hospital, although it might be considered as a successful case of intubation.

In those cases that recovered, the average time the tube remained in the larynx was six and one-half days. No definite rule, however, was followed as to the time of removal.

In cases that were progressing favorably the tube was left in position until the membrane had disappeared from the throat and nose and the fever had subsided.

The tube was removed in one case on the fifth day, the membrane being still present on the tonsils; on account of violent and persistent coughing and vomiting after taking fluids, the urine was also scanty, high colored, nearly three-fourths albumin; after which the cough was less troublesome, vomiting ceased, and the child took plenty of fluids; although the breathing was somewhat stridulous there was no return of the dyspnœa.

Coughing after drinking was a constant symptom and, in several cases, it was severe enough to induce vomiting. The above case was the only one, however, in which this symptom was severe or constant enough to seriously interfere with the ordinary feeding or treatment.

The most troublesome complication, and one that in several cases was productive of very alarming symptoms, was from the collection of mucus in the throat and con-

sequent obstruction of the tube. This was found especially apt to occur in very young children during the night or early hours of the morning, the child being unable to expel, by coughing, the mucus that gathered in the throat during sleep; as a result the respirations became labored and, if not relieved, gave rise to intense dyspnœa, interfering with the circulation, and, in fact, all the symptoms of stenosis of the larynx. For the relief of this symptom syrup of ipecac, in doses sufficient to produce vomiting, was given with good results, the act of vomiting expelling the mucus, and relieving the dyspnœa without disturbing the tube. Emesis was thus induced several times in one case, which afterward recovered.

The removal of the tube was always followed by more or less stridulous breathing, lasting from a few minutes to several hours, and in several cases by dyspnœa coming on in a few seconds or minutes and rapidly becoming alarmingly stenotic, necessitating the immediate reintroduction of the tube. In a child one year of age, the tube was coughed out on the fifth day, symptoms of stenosis suddenly appeared and the patient became unconscious; tracheotomy was immediately performed. The child revived and was apparently as well as before the tube was removed, but died quietly eight and one half hours after the operation.

In three cases, the removal of the tube was followed by symptoms that seemed to point to ulceration of the larynx or trachea, and in one in which a partial autopsy was obtained such was found to be the case. This was a child one year of age, with a marked croupy cough on admission, membrane on the tonsils and pharynx, which developed laryngeal stenosis on the third day when the tube was introduced, the membrane having disappeared from the throat on the sixth day, the tube was removed; the respirations at once became slightly stridulous with paroxysms of coughing which continued almost incessantly for two hours, the child dying of exhaustion. An examination of the trachea after death showed a small irregular-shaped ulcer at the base of the epiglottis, corresponding to the upper end of the tube, also a somewhat larger one, oval in shape and extending through the mucous membrane and involving the cartilages, on the anterior surface of the trachea, corresponding to the lower end of the tube.

The second case was a child, two years and seven months of age, with a history of a hoarse croupy cough, with paroxysms of dyspnœa for twenty-four hours previous to admission, profuse sanguineous discharge from the nostrils; enlargement of the glands of the neck; diphtheritic membrane covered the tonsils, and on the inner surface of the lower lip was a large stomatitic or diphtheritic ulcer. The dyspnœa, which was moderate, became well marked on both inspiration and expiration twelve hours after admission, and intubation was performed. On the ninth day, the local evidences of diphtheria having disappeared, the ulcer of the lip being nearly healed and the general condition much improved, the tube was removed.

Its removal was followed by a violent attack of dyspnœa, necessitating its immediate reintroduction, the cough became more frequent, of a harsh laryngeal character with expectoration of thick yellow mucus, at times streaked with blood; there was a very fetid, almost gangrenous odor from the breath, and although the child was taking a large quantity of nourishment, rapid emaciation, and death from exhaustion occurred on the twenty-fifth day of the disease.

The third case was a child five years of age, with a fading rash of scarlet fever at the time of admission, enlargement of the glands of the neck; thin watery discharge from the nostrils, and diphtheritic membrane covering both tonsils, and lining the anterior nares. Intubation was performed on the sixth day, or two days after the first appearance of the laryngeal symptom; the case progressed favorably, and on the tenth day, all evidences of diphtheria having disappeared, the tube was removed. The removal of the tube was followed as usual by slight stridulous breathing, which passed off in a few hours, and the child seemed in a fair way to convalescence, but a harsh laryngeal cough suddenly appeared, with expectoration of frothy mucus, occasionally streaked with blood, very fetid odor from the breath, and in spite of a ravenous appetite, the child grew very weak and emaciated and died on the sixth day after its removal. In both of these cases, the symptoms were very much the same, and similar to what might be expected from a gangrenous ulceration of the larynx or trachea. Unfortunately an autopsy could not be obtained.

Another interesting case was that of a child, three years of age, suffering from a severe form of nasal and pharyngeal diphtheria with extreme stenosis of the larynx on admission. Intubation was immediately performed and the child improved rapidly, so that on the sixth day the diphtheria having entirely disappeared from the throat and nose, and the general condition being much improved, it was decided to remove the tube. In passing the finger over the base of the tongue preparatory to introducing the extractor, there was an intense spasm of the glottis, the face became blue, head drawn back, and the body rigid, with almost complete cessation of respiration; the gag being still in position, an attempt was made to pass the finger into the larynx, but it was impossible on account of the constriction of the throat; this passed off in a few seconds and the tube was quickly removed. The respirations at once became stridulous, and before the tube could be prepared for reintroduction there was a second spasm more intense than the first, with complete cessation of respiration; this also passed off in a few seconds, the muscles became relaxed, face pale, the child gasped several times and began to respond to efforts at artificial respiration. The patient, still unconscious, was held in the nurse's arms and the tube easily introduced, artificial respiration being continued for several minutes before the child became conscious, when it was apparently as well as before the tube was removed. On the thirteenth day the tube was again removed, this time without any difficulty, the child breathing quietly for about five minutes, when the respirations became stridulous and immediately followed by a spasm similar to the one on the sixth day. As the respirations continued very stridulous and labored, an attempt was made to reintroduce the tube, with the same result as before, the spasm lasting, however, much longer, so that when the tube was finally introduced the child was moribund and died in a few minutes.

This case differed from others in which the removal of the tube was followed by violent dyspnœa, in that the passing of the finger over the base of the tongue seemed to excite a distinct spasm of the glottis very similar to that seen in laryngismus stridulus.

In three cases of severe diphtheria, with nephritis, dying from the effect of the septic poisoning, in which slight dyspnœa was present, the tube was removed and found to be nearly filled with thick mucus and cheesy material, the patients breathing easily and naturally after its removal, without any return of the dyspnœa.

The average age was two years and eleven months; youngest nine months, oldest seven years. In twenty-five cases admitted with diphtheria in which a fairly accurate history was obtained, the day of the disease varied from the second to the ninth, the average being the fourth.

Swelling of the glands of the neck was marked in twenty-eight, slight in eleven, and absent in three cases.

Discharge from the nostrils was slight in six, marked in eight, sanguineous in eleven, and absent in seven cases, although membrane was present in the anterior nares in only thirteen. When present in the throat the membrane was confined to the tonsils in fourteen, to the soft palate in one, to the tonsils and soft palate in eight, and to the tonsils, soft palate, and pharynx in nine cases.

In the majority of cases it was found very difficult to

obtain a clear history as to the time of the first appearance of the laryngeal symptoms, *i.e.*, the croupy cough.

In twenty-five cases the time from the first appearance of the laryngeal symptoms to the introduction of the tube varied from twenty-four hours to eight days, the average being about four days.

Progress of Medical Science.

PULSATING TUMORS OF BONE.—A paper was read recently by Dr. MacDonnell, before the Royal Academy of Medicine in Ireland (*The British Medical Journal*, November 24, 1888), on pulsating tumors of bone. He detailed the case of a lady who had been sent to him by Mr. Erichsen, nearly five years before. She then suffered from a pulsating tumor over the upper part of the fibula, which he and Mr. Erichsen agreed in regarding as probably a hæmatoid sarcoma of the bone. It continued for some time to increase in size. Operation was delayed on account of the lady's pregnancy, but she was directed to wear an elastic stocking. She suffered after delivery from phlegmasia of the other limb, which caused her to remain in bed for nearly six months, still, however, wearing the elastic stocking. When she came again under his observation, some time after her parturition, the tumor had disappeared. The case, which the result showed to have been probably an osteo-aneurism, was of much interest as pointing to the difficulty of diagnosticating between osteo-sarcomata and osteo-aneurism. In this case the resemblance to the former disease was so marked that, but for the delay caused by the pregnancy of the patient, an operation (which the result showed was not necessary) would probably have been performed. In the discussion which followed, Dr. Mapother said his case (to which Dr. MacDonnell had referred) arose some twenty-six years ago, and there was a previous one treated by Mr. Bickersteth, of Liverpool. In his own, the patient, aged twenty-eight, got a knock on the shin, and four months afterward a tumor as large as a walnut formed, half of it projecting beyond the level of the tibia without discoloring the skin, while the corresponding portion went into the substance of the bone. There was a distinct distensile pulsation, thrill, and *bruit*. Aided by Dr. Hutton, he removed the cuticle by potassa fusa, and then applied a cautery. After ten days intense hemorrhage occurred, as of a nævus suddenly wounded. In a few days the nævus matter came away, leaving a granulated surface, and rapid cure took place. Sixteen years subsequent to the operation he had heard of the patient as being alive and well in New Zealand. There was only a slight cicatrix, and thick bone around. Mr. Wheeler had seen two cases of pulsating tumors of bone, both sarcomata—one in the practice of Mr. Butcher, the other was in his own. In his own case, the seat of disease seemed to be the lower end of the tibia, which was distended. There was distinct *bruit*. He amputated at the knee-joint, revealing a tumor which Dr. Barker described as an osteo sarcoma. Eighteen months later the patient died of tumor in the liver, and he believed also in the spleen. He regarded Dr. MacDonnell's case as one of aneurism by anastomosis. He asked whether Dr. MacDonnell attributed cure to the rest and pressure the patient had while suffering from phlegmasia dolens. Mr. William Stoker said he had had a case of pulsating tumor started from the fibula, in a boy aged twelve. At first the tumor seemed localized to the shaft of the fibula so distinctly that he determined to remove the upper part; but the child's mother would not consent. Rapid distention having taken place, the child was brought back in a month, and the pulsation was notable, while the circumference of the limb had increased two inches in the interval. Although the rapidity of the distention made the result doubtful, yet he amputated above the knee, and the patient was now a young man alive and well. Dr. Phineas Abraham had pronounced the tumor to be a giant-celled sarcoma. There had been no recurrence. Mr. H. G. Croly called attention to the fact that the discussion had extended both to the subject of osteo-aneurism and that of malignant disease attacking the bone, while Dr. MacDonnell's paper referred to a case which was not malignant. So, too, was Dr. Mapother's case. Osteo-aneurism, it was agreed, was a disease that was not malignant, and the great interest in Dr. MacDonnell's case was the cure of the aneurism. He did not understand how phlegmasia dolens, even occurring in the same limb, could effect the cure. He had had a case of osteo-sarcoma in a girl aged eighteen, with a growth involving the lower end of the femur. Dr. MacDonnell concurred with him that her only chance was by amputation below the trochanter. The operation was performed, and she made a good recovery. After four or five years, however, she was attacked at the upper extremity at the opposite side by the same disease, which rapidly proved fatal. Dr. Ball said they had at present a case in Sir Patrick Dun's Hospital, in which the difficulty of diagnosis suggested by Mr. Croly presented itself, namely, of distinguishing between pulsating sarcoma of bone and pure angioma. On admission the patient complained of a small tumor on the top of the head, with intense pain in the back of his head and neck. The tumor was soft, and no pain could be detected in it; but very soon it enlarged, and the pulsation became marked, a train of cerebral symptoms developing apparently from pressure. He had periodical attacks of vomiting. Double optic neuritis and loss of sight ensued. Believing that if they arrested the blood-supply they might be able to retard the rapid progress of the tumor, he ligatured simultaneously the two external carotid arteries above the facial artery. The result was an amelioration of the symptoms; the vomiting entirely disappeared, the pulsation ceased, and the tumor decreased in size till it became imperceptible. However, now, at the end of a month, the symptoms were again developing—slight pulsation and severe pain in the head. There were veins as big as the little finger radiating round the skull, and the blood could be squeezed out, and a small hole detected where the communication existed. The case was one of angioma perforating the skull.

FRACTURE OF THE HEAD OF THE HUMERUS DUE TO MUSCULAR ACTION.—M. Auguste Pollosson has reported the result of his examination of two specimens taken from the body of an epileptic who died during a convulsion, and who had suffered no traumatism of any description. The upper articulating extremity of the humerus on each side presented lesions which, seen externally, were absolutely alike and symmetrically situated. These lesions consisted in a forcing in of the cartilaginous part of the humeral heads. The depression was found over the anterior part of the head near the border of the cartilage, immediately above the lesser trochanter; it had the appearance of a groove from two and a half to three centimetres long, and from five to six millimetres deep. The cartilage was bent toward the hollow of this groove, and presented near the deepest part a fissured line of fracture. A perpendicular section at the seat of the depression showed similar appearances. The laminæ of compact tissue beneath the cartilage presented the same curve and the same fracture. The lamellæ of the spongy tissue were broken and the spaces were infiltrated with black blood, evidently proceeding from an interosseous hemorrhage, and not from a congestive or inflammatory state. The lesions were similar on both sides. On the left humerus, beneath the inferior or lower edge of the groove, there was found a movable bony fragment of about a centimetre in diameter, surrounded with a bloody effusion. The bones were not diseased nor preternaturally brittle. The absence of traumatism, the symmetry of the lesions, and the evidences of hemorrhagic infiltration of all the shoulder muscles evidencing a spasm of great violence, were sufficient to explain the occurrence of this very rare accident.—*American Journal of the Medical Sciences.*

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CHRISTIAN SCIENCE AND MEDICINE.

WHEN, about eighty years since, an ingenious gentleman of Leipsic announced his discovery of the rational treatment of disease by the administration of drugs so attenuated that the patient scarcely obtained a fleeting smell of the medicament, he little thought that in the year 1889 the effects produced by his system would be so admirably explained by one of the laity as has been done by the Reverend Mrs. Eddy, of Boston, in a recent lecture delivered in this city, on the subject of "Christian Science as Applied to the Treatment of Disease." If we may believe the newspaper reports of this lecture, the reverend lady stated that, by actual experiment, she had found that a drug increased in efficacy as it was more and more attenuated, until its most happy effect was produced by its entire disappearance—a paradox explained by the fact that the mental power of the patient is the true active principle of the drug. Disregarding after this statement, the faint crepitus she might have heard, had her reverend ear been applied to the chest of mother earth produced by the bones of Hahnemann as he changed from a dorsal to a lateral decubitus in his sepulchre, she further remarked that this or these experiments had induced her to disregard the claims of materia medica to recognition as an exact science. The latter statement must have been misunderstood by the reporter, or have been toyed with by the type-setter; for no expounder of a scientific system of medicine, or rather a substitute for it, could have made the error of saying materia medica when therapeutics was meant. Therefore, holding the opinion that disease is but the shadowy creature of a perverted mind, one which is able to breed tubercular bacilli or gummy tumors at will, it is to be assumed that the Reverend Mrs. Eddy has made herself thoroughly acquainted with theoretical and practical pathology, and, indeed, with all branches of the pseudo-science she contemns; and, as one eminently proficient in the mathematically exact sciences of Theology and her own cherished Christian science, she would never conscientiously believe, or state in public, conclusions which were not drawn from data she personally had gathered by her own observation and exhaustive research. We have too much respect and reverence for the profession of which the followers are entitled to the adjective which Mrs. Eddy bears before her name, to believe for a moment that any minister of the Gospel of Christ would make erroneous statements as to facts intentionally or upon insufficient grounds. And yet it seems strange that when a patient, who has a fever so active as to cause continuous delirium, recovers without loss of flesh and strength because he was not aware of his illness on account of his delirium, and that another man, afflicted with fever "of the same kind," but unaccompanied by delirium, is much weakened and emaciated at the occurrence of defervescence as a result of his belief that his fever had a definite course to run, and was certain to produce a weakened condition of the system, the reverend lady should hold that the disease was the offspring of the mind, whether said mind was so actively employed in its work of creating and keeping up the disease as to be ignorant of everything else, or, indeed, of its own employment, or was normally cognizant of external matters and of its own labors in the interest of the disease. Unless her words have been sadly distorted by the reporters, such must be her belief, and the treatment in either case must be by adding faith to your will, even when the same will is absent on an expedition having for its object the gathering of wool, or is employed in "babbling of green fields." Does the Reverend Mrs. Eddy believe that the mind or will which has its seat in a softened brain, or which vegetates in the cerebrum of an idiot, or riots in that of a maniac, can "rise above matter and come nearer to God," when the possessor is either gasping for breath during the second stage of a double pneumonia, or is lying in the coma vigil of typhus fever? Is the fact that occupation of the mind will cause one to forget the pain of a nervous headache, in certain instances, any reason why the employment of airy *persiflage*, or entertaining conversation, should be considered a specific in the treatment of acute meningitis? Is there no actual difference between the ophidian usurper of the lawful kingdom of the foot of a patient who is absorbed in the zoölogical ecstasy of *mania à potu* and the clammy, sedentary tænia solium?

These are pregnant questions, but we fear that we have groped in darkness which can be felt for all these years, during which the lives and energies of deluded *savants* have been wasted in pathological research. Why then wrangle over early or late incision for perityphlitis, or over electricity or myomotomy for uterine fibromyoma? Do not take instruments for the performance of tracheotomy or intubation when you are called to a case of diphtheritic laryngitis—for the little sufferer only thinks he cannot breathe—but sit down and tell him so, at the same time mentioning the doctrine of justification by faith, or relating the parable of the eleventh-hour workers in the vineyard. Do not bother a new-born baby by cleansing its eyes when it believes them to be affected with purulent ophthalmia, but tell it how to rise above matter (which is very easily located at such a time), and how to concentrate its infant faith on things higher than this life, and of the Spirit.

The miracles performed by the Saviour seem to form the principal foundation of Mrs. Eddy's system of cure; at least she considers His example as the one we should adopt in our efforts to relieve human suffering. Does she remember the statement made by Him when Satan suggested a leap from the lofty summit of the highest tower of the Temple: "Thou shalt not tempt the Lord thy God." How does she, after rising above matter, and becoming independent of all disease, expect

to unloose the silver cord and break the golden bowl? If after the method of Elijah, will she drop her sealskin dolman and resign her percentage of the profits to some intimate friend, or will she simply vanish into thin air? And, by the way, if faith can remove mountains, and concentration of mind overcome the wear and tear of life on heart, brain, and muscles, why not on purple and fine linen, so that Easter-bonnets will be perennial? Would not much more profit, and more proselytes, be made if the reverend lady would, in a moment of leisure, lend her faith to M. de Lesseps, and at the same time neutralize the deadly miasma of the Chagres fever at Panama? Certainly some such work is better, more Christian and scientific, than occupying the presidential chair of a college in Boston, or making a number of no matter how iconoclastic, empty, unsupported statements to a paying audience in Steinway Hall. The life or health of many a poor wretch would be saved; the prosperity of many nations would be increased, and the cause of Christian science would be triumphant.

We feel that this advice is most generous on our part, for we earn our bread by the sweat we produce on the brows of our deluded patients, provided they are pleased to make practical demonstration of the gratitude they profess when first emerging from the gloom of what they, and we, have believed to be the Valley of the Shadow of Death, but which the Reverend Mrs. Eddy says is only the fictitious umbra of the infidel turpitude of an unregenerate mind producing an eclipse of the bright luminary, faith, because no attempt has been made to rise above matter. But even we, if by any means the health and prosperity of the community be improved, will cheerfully exchange our hypodermatic syringe for an unctuous and esoteric vocabulary, and our contributions to THE MEDICAL RECORD for subscriptions to the *Evangelist*.

The medical profession is not of the Scribes and Pharisees, but rather of the Thomas bent of mind—it does not refuse to believe, but only doubts, in order that it may believe; and when the marvellous cures attributed to Christian scientists are authenticated by testimony a trifle more valuable than that of the same class of people, who report rapid cure "of what all my friends said was a cancer," by the consumption of so many bottles of this or that patent medicine, the great majority of the physicians will be content with what of substance they may extract from the Gentiles, who will cling to the castor-oil and quinine of their ancestors.

SPORADIC CEREBRO-SPINAL MENINGITIS.

EPIDEMIC cerebro-spinal meningitis was first observed at Geneva, in 1805. The very next year it developed in Massachusetts, and during the next ten years it spread throughout New England. It was during this period that an American writer, Dr. Gallup, gave an excellent account of the disease as it appeared in Vermont. His place of residence, Woodstock, was the centre of an extensive epidemic. It seems to be a fact that, when the disease has once appeared in a place epidemically, it leaves certain slumbering germs which every now and then cause the appearance of sporadic cases. This is true of Philadelphia, where the disease has been endemic since 1863; and of New York, where we find cases reported almost continually since 1861. In country districts this rule seems also to prevail, if we may judge from the accounts given by Dr. F. T. Kidder, of Woodstock, Vt., where the disease was once so virulent. Dr. Kidder reports the case of a young lady who, without any known cause, was suddenly attacked with a severe chill followed by a fever temperature ranging as high as 103°. The patient suffered from terrific pains in the back of the head and neck, hyperæsthesia, spinal rigidity, and a tendency to opisthotonos. The fever and other symptoms lasted for two weeks, the patient's condition becoming most critical. After this, gradual improvement set in. A relapse, or second attack, occurred at the end of three months, and a second relapse some months later.

The fact that a latent endemic infection may exist and occasionally give rise to its special disease, is one that it will be well to bear in mind. Dr. J. Lewis Smith has suggested that some of the obscure forms of paralysis in children may be abortive manifestations of cerebro-spinal meningitis; and that neuritic pains and paralyses may have the same origin is not improbable.

It may be noted in this connection that cerebro-spinal meningitis is somewhat more frequent in this city at present than usual, from two to five new cases being reported weekly. As nearly all the cases reported have died, it is probable that a number of cases exist of which the returns have not been sent in.

RECENT STUDIES OF AMYLOID DEGENERATION.

THERE have been a number of contributions during the past two years to the subject of amyloid degeneration. The works of Labadie-Lagrave and of MM. Lecorché and Talamon may in particular be cited. Dr. A. B. Martin has given an interesting review of these in a recent article in the *Gazette des Hôpitaux*. Some of the critical observations there made we propose to give to our readers.

Amyloid degeneration occurs only in persons who have suffered from a prolonged cachexia. All forms of cachexia, however, do not cause this degeneration. The three principal types are those of chronic tubercular processes, syphilis, and prolonged osseous suppuration. This degeneration is also sometimes observed in empyema, chronic bronchitis, old ulcers, chronic pemphigus, malignant variola, dysentery, and phosphorus necrosis. It is a striking fact that in all these forms of trouble except syphilis, suppuration exists, and the fact lends weight to the theory that the syphiloma, as well as the tubercular tumor, are only modified or abortive forms of the suppurative process.

Amylosis, however, is also said to occur sometimes in chronic rheumatism, gout, malaria, and alcoholism. MM. Letulle, M. Moutard-Martin, and others have asserted that this same degenerative process may accompany, and perhaps be caused by, arterio-sclerosis.

Most interesting of all is the fact established by Charrin, that the *bacillus pyocyaneus* can cause in certain lower animals a peculiar disease known as the *maladie pyocyanique*. In this disease the animal suffers from paralysis, nephritis, and, finally, amyloid degeneration.

It has long been known that the so-called amyloid material is in reality not a carbo-hydrate, but a nitrogenous body. There has been much dispute, however, as to

whether it was carried in the blood and deposited in the degenerated organs, or was formed in these organs. The experiments of Charrin seem to show, if no other proof were at hand, that the latter theory is the more correct one. It seems at the present time probable that the degeneration results from the irritation of a specific poison, generated by suppurative or pyocyanic micro-organisms, and carried in the blood to the affected parts.

It would be natural on this supposition that eliminative organs like the kidneys should be especially affected, and also that the poison destroying organs like the liver should be affected by the process. The same hypothesis would explain also the amyloid degeneration of the vessels in which the diseased blood circulates.

Amyloid degeneration of the kidneys may be complicated with interstitial nephritis, forming the small white kidney (Lecorché and Talamon), or with cystic or tuberculous processes; or the waxy change may exist alone.

The symptoms produced by amyloid degeneration complicated with nephritis present nothing distinctive. The pure amyloid kidney has, however, a quite characteristic and well-recognized clinical picture. The urine is abundant, pale, of light specific gravity, and contains a small amount of albumin. Senator asserts that there is a peculiar form of albuminuria, viz., paraglobinuria. This is denied by Petri and Heyusius. One finds hyaline casts in the urine which are not, however, amyloid in character. Dropsy and uræmic symptoms are rare.

The treatment of amyloid degeneration is not very encouraging. After removing the cause of the suppuration and cachexia, if that can be done, very little remains for the therapeutist. An organ once degenerated can probably never be restored. If the suppurating focus cannot be cured, its poisoning effect must be offset as much as possible. We may, in time, discover some antidote to the microbic irritant that turns good tissue into useless wax. The *bacillus pyocyaneus* may even furnish us a help, used in attenuated cultures.

WASHING OUT THE STOMACH IN INFANTS.

WASHING out the stomach is now practised quite generally in a number of gastric derangements, and this method of dealing with morbid states of the stomach has steadily grown in favor for the past few years. Of late this practice has also been extended so as to include infants' diseases, and a number of favorable reports have been made relative thereto. One of the most important contributions to the subject yet published, was made recently at Berlin by Dr. Leo. *The Medical Press* has referred at some length to the address delivered by this observer, and the subject appears sufficiently interesting to warrant our transcribing *in extenso* the remarks of our contemporary. It is stated that Dr. Leo had followed out the practice in one hundred and thirty-four infants in Senator's Poliklinik. For determining the normal condition, he made use of thirty children between the ages of two hours and twelve months. He remarked that after the introduction of the œsophageal tube the contents of the stomach were generally evacuated spontaneously. It would be remarkable, indeed, if they were not. The reaction of the contents of the stomach immediately after taking food was neutral, or slightly alkaline in the case of breast milk, but with cow's milk it was slightly acid or neutral. A quarter of an hour after it was distinctly acid, within an hour after taking food no free acid could, as a rule, be detected, but it was almost always present in the fasting state. The free acid was hydrochloric, but lactic acid was also sometimes present in small quantities. No volatile fatty acids were ever met with. Pepsin was almost always found, whether the stomach was empty or full. Curdling ferment was always present in the stomachs of the newly born, and was independent of the presence of hydrochloric acid. The quantity of curdling ferment was frequently so great that milk coagulated, even in the cold, in a few minutes. The contents of the stomach were generally freely mixed with mucus, frequently brown streaks were found, being the residue of blood swallowed during birth. Investigation showed that a considerable portion of the milk had passed out of the stomach in half-an-hour. The time at which it had all passed out varied with the age of the child and the kind of nourishment. In younger children the stomach was frequently empty within an hour, but in older children more time was required. When cow's milk was the food employed it had not all passed out in an hour and a half, but it had invariably done so within two hours. If at this time the stomach was free from nutriment, it could not, however, be said to be absolutely empty. Only a few drops of fluid could be collected at this time, but they contained all the characteristic constituents of gastric secretion.

The practical observation was made by Dr. Leo that digestion in the stomach is not the same thing as digestion outside of it. In the stomach, fresh acids being continuously secreted and mixed with the digestive fluids, they would thus exert their influence upon them. This they could not do outside the stomach. The author also found that only slight solution of the casein had taken place in the incubation chamber in twenty-four hours, which of course bore no relation to the processes going on in the stomach. His method of examination was the following: A certain time after the child had taken the breast the contents of the stomach were brought up again, and examined for the contained peptone and propeptones, and the result compared with a sample of the food taken that had been made to curdle. After the milk was in the stomach for half an hour there was distinct increase of the first and second propeptones. Peptone itself was only present in small quantities. After an hour the quantity of peptone and of propeptones had considerably increased. Peptonization of milk therefore took place in the stomach. By this it was shown that continuous secretion of hydrochloric acid took place in the stomach. Peptonization of milk in the stomach was not of great importance as regarded digestion. This is owing to the short time the food remains in the stomach, digestion being mainly performed in the small intestine. The influence exercised in the stomach on the micro-organisms present in the salivary secretion seemed to be important, as the development of a part of them was arrested.

After these interesting and important physiological observations, the author proceeds to give his clinical experience with sick children. One hundred and four cases constituted his working material. Of this number sixty had dyspepsia, twenty-two suffered from cholera infantum, sixteen from subacute or chronic gastric catarrh, and six

from diarrhœa without loss of appetite. In regard to the reaction of the contents of the stomach, it may be remarked that whether full or empty it was acid, except when the food was breast milk. In many cases it was abnormally so, and dependent on volatile fatty acids, butyric and acetic as well as lactic acids. The disagreeable odor of vomited matter was due to butyric acid. Sometimes the amount of hydrochloric acid was abnormally large. Pepsin was generally to be found, but curdling ferment always. The constant presence of this explained why when cow's milk was given it was always found to be curdled.

One of the most salient features of all gastric affections is the abnormal length of time that the milk is retained in the stomach. In a case of acute febrile dyspepsia a considerable quantity of food of acid reaction, and containing volatile fatty acids, was present seven hours after it had been taken. A similar thing occurred in many cases of diarrhœa. It is plain, therefore, that in these cases there was deficient motor activity of the stomach; not, however, as a cause, but as a consequence of the illness. This was shown by the fact that after recovery and appetite had returned for several days this abnormal delay of the food in the stomach could be determined. A considerable quantity of tough mucus was particularly met with in gastritis and dyspepsia. Considerable quantities of gas were also observed to escape on passing the tube, especially in cases of gastro-ectasis.

In relation to the therapeutics of the subject, Dr. Leo noted two points. First, that the investigation explained why hydrochloric was of no value in many cases, and sometimes caused pain; and secondly, the uselessness of pepsine. But the value of clearing out of the viscus all noxious material gained new support from his investigations.

The fact that many practitioners were averse from carrying out the practice in children led him to relate his own experience. The method consisted in passing a soft sound, with funnel attached, into the stomach, and the employment of some washing-out fluid. Scarcely any difficulties were encountered. It was generally easier of performance in infants than in adults. He only occasionally observed retching movements, stoppage of the breath, and cyanosis, but never unfavorable consequences. He used simple water for washing out in many cases, but latterly a few drops of a twenty per cent. alcoholic solution of thymol. As food he ordered pure or diluted milk, or milk mixed with oatmeal gruel, and when infants are at the breast he does not interrupt the feeding. The results were, on the average, very good. In many cases repeated washing out was required, and was frequently done for a week or more. The best results were obtained in acute dyspepsia with or without vomiting or diarrhœa. A single washing out often sufficed for complete cure. In many cases there was high fever that vanished after the washing out. The results were much less pronounced in cholera infantum. Of 22 cases, 10 recovered after one or more washings, 6 were influenced by the treatment, while 4 did not return after the first washing. He also obtained good results in acute or chronic dyspepsia with intestinal trouble. Cases of habitual vomiting and severe diarrhœa were improved. It was a method of treatment not to be put into practice indiscriminately. The principal indication for it was dyspepsia. It was of more extended use in children than in adults.

THE OLD BOTANIC GARDEN.

In view of the proposed new Torrey garden, concerning which so much has been said of late, and to which allusion has been made in these columns, a few words of history may not be amiss concerning the old garden, which in its day enjoyed considerable prominence. It occupied the land west of the Columbia College buildings, and was owned by Dr. David Hosack, who purchased the ground from the city. From the Scottish birthplace of his father, it was named the Elgin Garden. From illustrations given in periodicals of that day, it must have been quite an imposing affair, containing, as it did, the area of four large city blocks.

The object of the owner, primarily, was to collect and cultivate native plants, especially those possessing medicinal virtues. In 1805, some fifteen hundred species of native plants were under cultivation. The collection was gradually enlarged, and reached its greatest value about 1811. The ground was covered with suitable buildings. A substantial stone wall, lined by a belt of forest-trees and shrubs, surrounded the premises, which were one of the sights of the city.

Naturally, the maintenance of such an establishment was very expensive, and soon outstripped the private means of its owner. He proposed to sell it to the State, the latter to maintain it for purposes of instruction, especially in medical study. Accordingly, in 1810 the Legislature consummated the bargain for about seventy-five thousand dollars, and the garden was placed under the formal charge of the Regents of the University.

The latter had no money to devote to the support of their newly acquired property, and placed it in charge of the faculty of the College of Physicians and Surgeons. The latter body was to maintain the garden according to the original intent, under the inspection of the regents. The garden proved an elephant on the hands of the college authorities. The expenses of keeping up the hot-houses, heating apparatus, drainage, etc., were great. It had great trouble with the gardener in charge. The property gradually ran down. It was too far, in those days of no street cars, or elevated roads, from the medical teaching centre, which was in Barclay Street. In a word, it died out, and in 1816, under legislative authorization, Columbia College became the owners, for some consideration unknown. The valuable plants remaining at the time were given to the Bloomingdale Asylum. Of the value of the land, at this time, Munchausen tales might be told.

Of the whole transaction, we might say after this lapse of years, "'tis true, 'tis pity," etc., but we must not judge too harshly. It seems somewhat strange that the State did not provide, in part at least, for its maintenance as well as wholly for its purchase. The great extension of the municipality northward would have, of course, long ago necessitated its removal, but it seems a pity that the present generation is obliged to duplicate, at a greatly increased expense, the work of four-score years ago. The idea of instructing medical students in the botany of native medicinal plants is a highly commendable one, but must, in the present state of science, be thoroughly systematic, and be associated with laboratory work. This will be practical botany from beginning to end. The work must be

required, not merely permissive. If the new garden shall be established, and we sincerely trust it will, we doubt not but that its teaching facilities will be freely placed at the disposal of our local institutions of learning.

News of the Week.

DR. HUME'S CASE.—Dr. William A. Hume writes: In the report of a case of compound depressed fracture of the skull, in the last issue of THE MEDICAL RECORD, the date 1886 should be 1881. The duration of the case was over seven years, which, considering the extent of the lesion, adds to its interest. Kussmaul and Fenner should read Kussmaul and Tenner. The diagram should be reversed."

DR. J. J. MULHERON has retired from the editorship of the *Medical Age*. He is succeeded by Dr. B. W. Palmer.

ESCHSCHOLTZIA CALIFORNICA—A SUBSTITUTE FOR MORPHINE.—The Paris correspondent of the *New York Medical Journal* reports in a recent number that M. Bardet and M. Adrian have examined the American plant called *Eschscholtzia Californica*, and they find that it really contains morphine, and this is the first time that a plant of any other order than the *Papaveraceæ* has been found to contain that alkaloid. Dujardin-Beaumetz says of it: "*Eschscholtzia Californica* is a soporific of great value, while its use is unattended by untoward effects. It is an analgesic of much worth in certain cases. It does not present the inconveniences of morphine, while its administration is very simple. The dose administered has been from 2.50 to 10.0 grammes per day, and it can be given either as a decoction, a syrup, or in the shape of pills.

THE AFRICAN HYMEN.—Controversies of a curious and unique character often arise in scientific circles. None is more curious than that concerning the position of the hymen in the negro race. The late Dr. Turnipseed, of South Carolina, used to claim that the hymen in the negress was not over but above the vaginal entrance. This he claimed to be a natural and providential race-distinction (Dr. E. S. McKee, *Annals of Gynæcology*). This view is controverted by Dr. Hyatt, of North Carolina, who has had the tropical experience of examining one thousand virgin negresses, and finds the hymen having the same relations as in the white race.

A MUNIFICENT DONATION.—By the will of the late Alexander Murray, of Montreal, the Montreal General Hospital will come into possession of the sum of $750,000. Next to the donation of $1,000,000 made by Sir Donald A. Smith and Sir George Stephen for the founding of the Royal Victoria Hospital of Montreal, that of Mr. Murray is the largest ever made in Canada for any similar purpose.

AN INTERNATIONAL MEDICAL ASSOCIATION.—With a view to promote social intercourse and maintain good fellowship between British and American physicians who practise on the Continent, it is proposed to form a society under the title of the British and American Continental Medical Society. The membership is to be limited to British and American subjects who are actually engaged in the practice of medicine abroad.

CRIMINAL ABORTION BY BLOWING AIR INTO THE UTERUS.—Dr. S. B. Ward, of Albany, reports the case (*Albany Medical Annals*) of a woman three months pregnant, who introduced a catheter into the uterus. Her paramour then blew air into it. The woman uttered a cry, sank back unconscious, and in a few hours died. Dr. Ward testified that death was caused by shock, no air being found in the circulatory system. The incident recalls the reputed fact that a notorious female abortionist of this city used to produce abortions by inflating the uterus with air.

THE HOMŒOPATHS OF NEW HAVEN are trying to get money to build a hospital. It is asserted that half the property in New Haven is owned by homœopaths.

A FAMINE OF CASCARA SAGRADA is reported. The habitually constipated, however, need not feel distress as long as *ricinus communis* continues to bloom, the *aloe socotrina* to exude its juice, and the cathartic springs of Europe to pour forth their healing streams into the bottles and barrels of their bloated and eupeptic stockholders.

SPINAL SURGERY.—Dr. Robert Abbe has recently trephined the spinal canal for a second time, opened the dura, and resected the posterior roots of four nerves in a case of intractable brachial neuralgia and neuritis. The patient is reported to be doing well.

CHEEVER SCHOLARSHIP.—The Harvard Medical School has just received from Dr. D. W. Cheever the sum of $5,000 to establish a scholarship, to be known as the David Williams Cheever Scholarship.

MUST NOT HAVE SPECIALTY ON CARD.—The American Association of Genito-Urinary Surgeons says that it will not consider the application for membership from one who on his card states that he is a Genito-Urinary Surgeon. He can do this in connection with his papers in medical journals, and with the reprints of the same, in the announcements of the dispensaries, etc., with which he is connected. By these means he may advertise his specialty among the people and the profession, but he must not do the same thing with his cards.

VETERINARY MEDICINE AT HARVARD.—President Eliot, in his annual report, does not speak encouragingly of the Veterinary Department. It is justly said that this "department should be made a centre of research in the many fields where the health and well-being of men and animals are bound up together," but the continuance of an annual deficit makes it doubtful whether there is sufficient interest in the school to secure an adequate endowment.

A MINISTER OF PUBLIC HEALTH FOR FRANCE.—The Sanitary Department in France was formerly attached to the Ministry of Commerce. This was natural when French sanitation was confined to enforcing measures for preventing the propagation of epizootic diseases. This connection has recently been severed, and the Sanitary Department has been attached to the Assistance Publique of France. M. Monod (whose reputation as an enlightened sanitarian is established throughout Europe) has been nominated by presidential decree director of the two services, with the title of Director of the Health Service.

CROWDS OF AMERICAN MEDICAL STUDENTS.—The number of Americans attending clinics and lectures in Vienna appears to be increasing from year to year. The practical courses given by the "Privatdocenten" are the most popular. The Americans are always eagerly welcomed by the teachers in the various special departments, on account of the extra fees that many of them bestow. "Crowds of students of medicine" are getting to be a well-recognized social phenomenon all the world over. Where they all come from, and what becomes of all of them, is still apparently enveloped in mystery.

TOO MUCH OF A GOOD THING.—It is reported that the accommodations for both students and patients in the clinical service at Vienna are wholly inadequate to the demand upon them. There are so many patients that they cannot receive the attention necessary for the treatment of their complaints and cannot be satisfactorily utilized for purposes of instruction, and the crowd of students is so great that none of them is able to derive much benefit from attendance at the clinics.

MASSAGE IN THE PACIFIC ISLANDS.—In a recent number of the *Glasgow Medical Journal* Dr. Anderson writes: "From time immemorial the practice of massage has been known to the Fijians, from whom the Samoans first, and then the Tongans, learned the art. The process consists in rubbing and kneading the part, the operation being sometimes continued for hours; it stimulates the circulation and relieves pain, and is commonly used in abdominal disease. The native doctors have great faith in massage, and it is always practised by them."

A STRANGE ACCIDENT.—A medical student, named Grieme, who was acting as assistant to Dr. P. S. Conner, in the Cincinnati Hospital, was recently severely burned. He was heating a platinum knife by means of a lamp and a bottle of benzine, the latter being fastened to his waist by a belt. By some accident the benzine took fire and exploded, enveloping the unfortunate man in flames which were with difficulty extinguished. Mr. Grieme was very severely burned, but it is hoped that his injuries will not prove fatal.

ARSENIC POISONING.—A family party, consisting of the father and four children, narrowly escaped death by poisoning, recently, in a village in England. In the absence of the father and mother, the children made some pancakes for breakfast, mixing what they took to be soda, but which was in reality a paper of arsenic mixture, with the flour. After the father and children had partaken of the pancakes, they soon exhibited symptoms of poisoning and became violently ill. A neighbor who was called in administered an emetic, which took effect, and medical assistance was afterward rendered by Dr. French. The father and children are progressing favorably.

THE ACTION OF ANTIPYRETICS ON TISSUE METABOLISM.—Dr. Muneo Kumagawa, working in the chemical laboratory of the Pathological Institute at Berlin, comes to the conclusion, from experiments on dogs, that all antipyretics, except quinine, increase nitrogenous excretion. Antipyrin affects this process very little; the remaining drugs, viz., benzoate of soda, benzoic acid, salicylate of soda, salol, antifebrin, and thallin, all increase tissue water.

A CASE OF LEPROSY CURED.—Such is the title of a paper published by Dr. Dreckmann, of Vienenburg, in the *Monatshefte für praktische Dermatologie*. The patient, a man, aged forty-two, had suffered from *lepra mutilans* for four years, all his extremities being characteristically affected. He was treated by "Unna's Method," being painted with pyrogallic and chrysorobic acid salves, and salicyl-creasote plaster-mull. Internally he was given ichthyol. Most extraordinary improvement in all the symptoms followed, and eventually the patient became practically well.

BOOKS AND BACILLI.—From an experimental investigation carried out by the Dresden municipal authorities it would appear that pathogenic micro-organisms do not thrive on books. The dust from a number of unused volumes was found to be only matter of a harmless character. The tubercle bacillus was specially sought, and, most conspicuously, not found. The conclusion arrived at was that the danger of circulating libraries spreading infection is very slight, but a recommendation is given to dust books well before reading them, and never to wet the finger in the mouth for the purpose of turning over the leaves.

HOSPITALS IN THE STATE OF NEW YORK.—The incorporated hospitals of the State number sixty-five, of which fifty are general, and fifteen special in their objects. The property held by the hospitals, October 1, 1888, was valued at $14,045,551.00, as against $13,350,826.58, their valuation, October 1, 1887. Their receipts for the fiscal year ending September 30, 1888, were $2,601,174.75, and their expenditures, $2,203,921.74. The number of patients in their care, October 1, 1888, was 3,686, as against 3,516, October 1, 1887.

THE POST-MORTEM WARTS, says Dr. Wm. Osler, are now pretty generally regarded as local tubercle, the result of inoculation. The presence of bacilli has been demonstrated in several instances. The tubercles consist chiefly of granulation tissue, occasionally with giant-cells, and with papillomatous outgrowths of the epidermis, which give the tubercle the wart-like character. They are met with in persons who perform many post-mortems and in those whose business brings them into close contact with animals and animal products. Their occurrence is by no means infrequent. In Germany it is quite common to see the hands of the demonstrators of pathology (and more especially the attendants in the autopsy-rooms) disfigured by these structures. Mr. Hutchinson considers these warts a form of lupus.

WHAT BECOMES OF MEDICAL GRADUATES?—Sir James Paget made an inquiry some time ago into the career of one thousand medical graduates. Lately, says the *British Medical Journal*, the Dean of St. Mary's Hospital Medical School, Mr. G. P. Field, has occupied himself by tracing the careers of students educated at his school. He found that 1,000 men had joined the hospital up to last May, of whom 284 are present students, so that 716 had to be accounted for in other ways. Of these 716, 17 had left the profession, and 171 had been lost sight of altogether, some probably having also left the profession, and others having doubtless died. In addition to these, 64 were known to be dead, and 12 had failed entirely. These numbers (17, 171, 64, 12) added together amounted

to 264, and left 453 (63.2 per cent.) in practice. Of the 453, 371 were in general practice (231 in the country, 99 in London, 31 abroad, while 10 were dentists), 48 were in the Army and Navy, and 34 had achieved the great success of being on hospital staffs as teachers, or were distinguished in various other ways (14 had been elected on the staff of St. Mary's Hospital, 9 were on the staffs of other hospitals, and 11 others were distinguished men). Thus, according to Mr. Field's figures, about 34 of 716 students, or less than five per cent., achieved distinguished success. Sir J. Paget's figures give only 2.3 per cent. for the same class; but then he seems to have limited himself to fifteen years of practice, whereas Mr. Field's observations in some cases must have extended over thirty years, which may account for the difference, as distinguished success comes to some men only after tedious waiting.

The Third Russian Medical Congress was held in St. Petersburg on January 15th and seven following days. It was opened with considerable solemnity, and in the presence of a large number of the political, medical, and scientific celebrities of St. Petersburg, by Professor Botkine, who said that the number of members present at the first Congress was 500, at the second 1,000, and at the third 1,500. Dr. Erissmann, Professor of Hygiene at Moscow, was elected President of the congress. The congress was divided into no less than eighteen sections, and an immense number of papers were read; to some of these we hope to refer in future. An exhibition—resembling in its scope the annual museum of the British Medical Association—was organized, and remained open for three weeks; it was especially remarkable for the historical collection of plans and models illustrating the development of hospitals in Russia.—*The British Medical Journal.*

The Journal of Ophthalmology, Otology, and Laryngology, is the title of a new quarterly journal edited by Drs. D. Geo. S. Norton and Chas. Deady, and published by A. L. Chatterton & Co., of this city. It is to be devoted chiefly to original articles.

The Microbe of Malaria.—At a recent meeting of the Academy of Sciences, Professor Bouchard presented, in the name of Professor Laveran, of Val de Grâce, a memoir on the parasite of impaludism. The parasite brought to notice by the author in 1879 is considered as being incontestably that which produces intermittent fever. Everywhere where cases of fever were examined the same organism was found, and that not only in France, but also in Germany, in Italy, in Russia, in Algiers, in Madagascar, etc. M. Bouchard, therefore, considers it as demonstrated that intermittent fever is due to the parasite discovered by Dr. Laveran.—*The Lancet.*

Progress in Medical Legislation.—The Supreme Court of the United States has decided that medical registration and licensing laws enacted by the States are constitutional. The *Epoch* says: "In at least three of our most populous States—New York, Massachusetts, and Pennsylvania—bills have been introduced into the Legislature with the express purpose of making all who wish to practise medicine submit to an examination before a State Board of Examiners. Of course such measures are vigorously opposed by the 'cancer' doctors, 'faith-curists,' magnetic healers, and all other quacks that feed upon the credulity of the public. The war between the 'regulars' and 'non-regulars' seems to be exceedingly vigorous in Massachusetts. According to one newspaper account the 'unprofessionals' have there raised a large amount of money to defeat any legislation designed to exclude them from practice. No good reasons have ever been advanced why all who wish to become doctors should not pass a thorough and strict examination before they are permitted to practise."

Cycling as a Therapeutic Agent has a considerable future; it ought not to be taken up at too early an age; the so-called "bicycle back"—round, stooping shoulders—is particularly liable to be produced in a growing lad who uses the bicycle too much; a convenient rule is to avoid recommending it till a lad has passed the age when the chief growth in height takes place. Dr. Jennings' book confirms the impression formed from observation and the perusal of scattered notices in fugitive literature, that cycling is a form of exercise specially useful to men who are growing to be a little more than middle-aged. A man who has followed a sedentary occupation begins to experience increasing disinclination to exertion, chronic constipation, with some stiffness and it may be flying pains in the joints; for such a man a tricycle is capable of accomplishing a great deal; exercise ceases to be a trouble, the bowels become more regular, and the joint troubles, which may be at first a little aggravated, disappear. Dr. Jennings believes that chronic gout and rheumatic gout may thus be cured, or at least kept at bay, even when the patient has been seriously crippled by several attacks; he also speaks very confidently as to the cure of obesity, if the patient will refrain from gratifying the thirst, which is at first very trying; he even finds some reason to believe that his favorite exercise may be a useful adjuvant in the treatment of early phthisis.

Poisoning from Sulfonal.—The Berlin correspondent of the *Medical and Surgical Reporter* is responsible for the following: The new drug is, however, by no means so harmless as has been hitherto asserted by its manufacturers. Dr. Bornemann has just reported a case of severe poisoning resulting from the administration of the drug. The patient, to whom sulfonal was given for insomnia caused by cerebral excitement, was a physician. The result was a pronounced intoxication showing very complicated symptoms. There was a distinct interference of co-ordination, first in the lower and later in the upper extremities. He could not, for instance, raise a cup of coffee. A very prominent feature of the poisoning was his perverted feelings and illusions. The patient believed he had two heads, four feet and arms, etc.; or he believed he was on a boat or in a railway-car, and that someone was about to kill him. These illusions may be termed reflectory. The ataxia referred to is a central one, as it remained unchanged no matter whether the eyes were opened or closed. This distinction between central and sensory ataxia has been made by Professor Mendel. The drug did not exert any unfavorable influence over the heart and circulation—which appears opposed to the warning of Dr. Schmey not to use sulfonal in angina pectoris and arterio-sclerosis.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, January 4, 1889.

FRANCIS P. KINNICUTT, M.D., PRESIDENT, IN THE CHAIR.

DR. GEORGE F. SHRADY read the paper of the evening (see p. 205), entitled

SOME OF THE ABUSES OF ETHERIZATION.

DR. WILLIAM T. BULL said that he could in the main concur with everything that the author of the paper had said, and he approved heartily of his graphic denunciation of the rapid or drenching method of administering ether. Not only was the gentle method to be recommended at the beginning of the administration, but even when the patient was anæsthetized the subsequent development of bad symptoms, as stated by the author, could be prevented by its continuance and by the avoidance of a drenching of the patient with ether. His plan was to allow the patient to breathe a little of the vapor of ether at first, and later to give the anæsthetic in larger quantities. When it was given in this way he had never seen any accidents or bad symptoms, and he regarded ether as not only a safe, but even an agreeable, anæsthetic. It was a bad practice for a hospital surgeon to tell one of his internes to go ahead and give ether, while he himself went off to see patients in another part of the hospital. He agreed with Dr. Shrady, that an inexperienced person should not be allowed to give ether. He had met with four deaths under ether in his hospital practice, and had taken pains to ascertain the particulars of the administration in each instance, and in each of these four cases he found that the patient was in the hands of the junior assistant at the time death took place. Almost the only disagreeable occurrence which was apt to be encountered, when ether was given in the proper manner, was bronchorrhœa, but this was sometimes so annoying that he had been led to substitute chloroform in certain operations about the larynx.

He had not used morphine before the induction of the anæsthesia, but had, in the case of certain plastic operations, administered the drug hypodermically after the patient was thoroughly anæsthetized, and his experience had taught him that this method was one of great value.

He was not prepared to assert positively that the administration of ether to patients suffering from albuminuria was free from danger, yet he was personally inclined to believe that this danger had been exaggerated. The speaker had operated on many cases of urethral stricture, complicated with cystitis and albuminuria, and had never seen any bad effects from the ether administered. This experience had led him to believe that there was no especial danger in giving ether in cases of kidney disease.

DR. CHARLES L. DANA said that he had occasionally been struck by statements made to him by patients suffering from nervous disorders, who referred the commencement of their troubles to the time when they had taken ether. The operations in these cases were of a trivial nature, and not likely to have been the cause of the nervous disturbances noted. He thought it not improbable, therefore, that certain neuroses, as stated by Dr. Shrady, might be originated by the administration of ether, although the possibility of such a cause for the production of disorders of this kind did not seem to have been generally recognized.

DR. JOSEPH D. BRYANT said that he had always thought that one of the leading abuses in the use of ether was that its administration was entrusted to the junior hospital surgeons, for it was certainly a bad practice to entrust such an important duty to an inexperienced person. What sort of an ether cone might be selected was of less importance than the proper employment of the one that was used. The inhalation of ether should begin very gradually, and later it could be pushed more rapidly. A moderate-sized dose of whiskey, given before the administration of ether was begun, was often of good service. There was another abuse that was very common, and consisted in the shaving or scrubbing of the part to be operated upon, by the senior, while the junior was engaged in giving the ether, thereby disturbing the patient, and rendering the induction of anæsthesia more difficult. During the administration of an anæsthetic the patient should not be disturbed in any way, either by being handled or by the talking of those about him. The speaker said that he had been particularly fortunate in not having witnessed any serious accident during the administration of ether since the time when he was serving as interne in the hospital. During his term of service a patient died under ether. The urine contained albumin and casts, and a post-mortem examination showed the existence of nephritis. He had several times seen dangerous symptoms arise, but whenever that happened it was always found that the giver of the ether was looking at the operation instead of attending to the patient. The simplest means of preventing closure of the glottis was to push the lower jaw forward, and this was far preferable to drawing forward the tongue by forceps. He did not wish to be understood, however, as advocating constant pressure against the angles of the jaw, a proceed ure which Dr. Shrady had protested against, and one that was likely to produce a soreness lasting perhaps for several days. It was to be done only occasionally, and when indicated by symptoms of closure of the glottis. As to the use of ether when kidney complications were present, his experience in connection with urethral operations had been of such a nature as to lead him to discard ether in these cases. He now always employed chloroform when he found disease of the kidneys present.

DR. ROBERT F. WEIR said that the general impression that ether was a safe anæsthetic was not entirely correct. He had on a previous occasion gone over the records of operations at the New York Hospital for a long series of years, to determine this very point. He had collected the statistics of some twelve thousand operations performed under ether, and of these there were six deaths attributed to the anæsthetic, or one in every two thousand cases. It had been stated that the proportion of fatal cases in chloroform anæsthesia was one in twenty-five hundred, and from ether one in twenty-five thousand; but deaths from chloroform were much more frequent than this, and, as the result of his investigations would seem to show, the proportion given for ether was also too low. While he believed that ether was far more safe than chloroform, it was nevertheless a fact that the use of any anæsthetic was much more dangerous than was generally supposed, and hence the necessity of constant watchfulness during its administration. He did not believe that ether was in itself especially dangerous in those cases in which a kidney complication existed.

The speaker did not look with favor on Howard's method of opening the glottis, by allowing the patient's head to fall back over the end of the table. He had tried it recently in a case upon which he was operating, but without success. He had also tried it in his own person, and had found that it rather impeded respiration. Several years ago he had placed a patient in this position, during an operation upon the mouth in which there was considerable hemorrhage, in order the more easily to prevent the blood from flowing into the larynx, but the patient stopped breathing almost immediately, and the attempt had to be abandoned.

DR. BEVERLEY ROBINSON had been unable to satisfy himself as to the danger of etherization in cases of kidney disease. He had always watched such cases with considerable interest, but had not yet seen evidence enough to convince him that the ether was a source of danger, though he was not prepared to deny that it might be The same was the case in regard to disease of the heart, although he said he would be loath to give ether or to se:

it given to a patient suffering from serious cardiac trouble. As to the case of pulmonary disease, he had seen a death during anæsthesia occurring in a patient suffering from phthisis, and he believed that it was directly attributable to œdema of the lungs caused by the ether.

Dr. Samuel Sexton said that, judging from the remarks that had been made by Dr. Shrady and by those who had taken part in the discussion, he thought that it was time some reforms were brought about in the matter of administering ether. He had witnessed the administration of this anæsthetic to young children in what seemed to be a most cruel manner. The child would be held by the hair of the head, and during its struggles the head would be brought down forcibly against the table, thumping it in no gentle way. He was always in the habit of instructing his patients to breathe out fully several times at the beginning of the administration of ether, as suggested by the author of the paper, and in this way it was possible to get rid of some of the residual air. After a few forcible expirations the ether was given, and then acted, as he believed, more efficiently and pleasantly. He had recently been interested in the question as to the time required to produce profound anæsthesia in adults. In a few cases, in which the time had been accurately noted, he had found complete anæsthesia produced in from fifteen to twenty-five minutes. The ether in these cases was given carefully, and not by the drenching method. In operations on the ear profound narcosis is requisite, since otherwise the patient will vomit from reflex influences propagated from the ear when the first incision in the drum-membrane is made, thus interfering with the operation. Such an experience would not, of course, occur while the surgeon was operating on any other part of the body.

Dr. James B. Hunter believed that ether was largely eliminated by the kidneys, and when the kidneys were diseased there was danger in its administration. He agreed with Dr. Shrady and Dr. Bryant, that the room in which the person was being anæsthetized should be perfectly quiet, and that the patient should not be disturbed by talking or by preparations for the operation. He thought also that the kind of cone used was a matter of less importance than was the manner of administering the ether. The time required for the induction of anæsthesia was usually from three to five minutes, and he had never seen so long a time as twenty-five minutes so consumed. He regarded Clover's or Ormsby's inhaler as the best apparatus, and it was also much more economical in the amount of ether employed, as from one to two ounces was the average amount required for the induction and maintenance of anæsthesia during an ordinary operation. The patient should take several long inspirations and expirations at first and then breathe deeply, when the ether should be pushed rapidly. One great advantage of Clover's apparatus was that vomiting was the exception after the administration of ether by means of it. He believed with Dr. Shrady that too much care could not be taken in administering ether by the junior assistants in hospitals, that as a rule they were not properly qualified to do so, and that it would be well for the Society to endorse the views of the author of the paper by an authoritative expression of opinion on the subject.

Dr. Weir had noted the time necessary for the induction of complete anæsthesia in thirty or forty cases. When the ether was crowded the time required was between four and five minutes, but by the slower and more pleasant method from eight to ten minutes were consumed.

Dr. V. P. Gibney asked whether the primary object of the administration of morphine, as mentioned by the reader of the paper, was to aid in prolonging the anæsthesia, or to stimulate the heart's action. He had been in the habit for some time of giving the drug on account of its action as a heart stimulant, and had had frequent occasion to observe the good effects of this method.

Dr. Shrady replied that he had both objects in view in giving the drug, though it was primarily as a safe and efficient means of prolonging anæsthesia that he had recommended its use.

Dr. William M. Polk said that he had abandoned the use of undiluted ether, as administered by the ordinary methods, and confined himself pretty much to giving the anæsthetic by Clover's apparatus, which he looked upon as superior in many ways. Ether was a rank poison, and was liable to act badly when least suspected, and no one could tell what the result would be in any given case. Ether was often given without any previous examination of the organs of the body, and this was the explanation of some of the disastrous cases which had been recorded. A careful inquiry of all the organs, which we know are liable to behave badly when the patient is under the influence of ether, should be made. Attention should not be directed to the kidneys alone, but to all the organs of the body. If any disease is found, then the patient should be warned of the danger, though the speaker would not refuse to give ether under such circumstances if necessity called for its administration. He regarded chloroform as a safer anæsthetic in cases of pulmonary disease.

Dr. George L. Peabody did not believe that ether was specially dangerous in an ordinary case of chronic Bright's disease, and thought that the presence of such an affection should not be regarded as a contra-indication to the administration of the anæsthetic. Nor did he believe that the existence of a well-compensated valvular affection of the heart offered any special contra-indication. Ether should not be administered ordinarily in cases of bronchitis, though patients suffering from empyema bore ether well in his experience. It was a matter of great importance to instruct the receiver of the ether as well as the giver. A little judicious talking to a patient about to take an anæsthetic would often be productive of much good. A rapid mode of giving ether, which would seem to be free from many of the objections raised against the drenching method, had been used to some extent in Philadelphia. This consisted in warming the ether, and conveying only the vapor to the inhaler. In reply to an inquiry, the speaker said that he had no facts to present bearing on the question of the danger of giving ether to patients with glycosuria.

Dr. J. West Roosevelt did not think it at all safe to give ether in cases of empyema. He had seen two cases of this sort in which respiration ceased. One case died, and the other recovered after the employment of artificial respiration. In the case that died the ether had been administered with the utmost care.

Dr. Weir had also seen two such cases, and now never permitted ether to be given in a case of marked empyema.

Dr. Polk related a case of a patient operated upon for the closure of an intestinal fistula, who was suffering at the same time with nephritis. The patient died in uræmic convulsions a few hours after the operation had been performed. In this case Clover's apparatus was used, and only about four ounces of ether had been consumed.

Dr. Weir said that he had tested the urine of patients with Bright's disease after the administration of ether, but had found no increase in the quantity of albumin.

Dr. Bull said that Clover's apparatus was ill suited to general surgical use, as it was necessary to instruct every new man how to employ it. It was inconvenient also in operations upon the upper part of the body. Not more than five or ten minutes should be consumed in the etherization of an ordinary patient. From six to eight ounces of ether should be enough to keep a person anæsthetized during an operation of from a half to one hour's duration. He regarded empyema as a much more important contra-indication to the administration of ether than other conditions, such as heart disease. He referred to the question of

MANIA FOLLOWING ETHERIZATION,

and said that it must have been within the experience of all present to have seen nervous disturbances excited and

continuing for quite a time after the administration of ether. He recalled one case in which the patient was delirious for four days after having been etherized, not recognizing anybody during all this period.

Dr. Bryant had seen a similar case occurring in the person of a Cuban, upon whom he had operated. There was no history of insanity in the patient's family. His reason was eventually perfectly restored.

Dr. Polk had met with two such cases. In both instances the patients had always been a little queer, though not in any sense insane. He had attributed the pronounced nervous disturbances in these cases to the shock of the operation, and not to the effects of the ether.

Dr. Hunter had also seen two cases of temporary mental disturbance following etherization.

Dr. Shrady, in closing the discussion, said that he had, perhaps, been misunderstood in respect to the weight of importance attached to the danger of giving ether to patients with Bright's disease, yet he believed that there was more or less danger under such circumstances. In common with other surgeons, however, he had often operated without accident upon patients with Bright's disease in cases of emergency, notably for strangulated hernia, and extravasation of urine, but it was always with some misgiving based upon the warnings of Emmett, Van Santvoord, and others. He did not regard a well-compensated valvular affection of the heart as offering any special contraindication to the administration of ether. He seldom gave ether to children under five years of age, preferring chloroform in such cases. He had used Clover's apparatus with satisfaction in some instances, but preferred the cone in ordinary cases, by reason of the fact that its mode of employment was better understood by most people. A better effect was obtained in mixed narcosis when the morphine was administered before than after anæsthesia was established. He had had no personal experience in the application of Howard's method of raising the glottis in cases of suspended breathing. He was much pleased to hear his views regarding the abused methods of etherization endorsed by the different members, and thought that the recommendation by Dr. Hunter, that the Society should take some action in the matter, especially with reference to the administration of ether by the younger members of the hospital staff, was a good one.

After some discussion the President appointed a committee for that purpose consisting of Drs. Hunter, Weir, and Shrady, who should report at the next meeting.

The Society then adjourned.

Pessimism.—Pessimism can find no better stimulus to effort than the desire to lessen the appalling weight of human woe which, according to its exponents, must ever remain overwhelming, and ever resist every effort for its successful mitigation. It points to no Land of Promise, the prospect of whose milk and honey may inspirit the weary travellers through the wilderness; it sings no pæans over a coming era of freedom, plenty, enlightenment, and peace; it bluntly informs humanity that its lot is evil, that its best efforts will never achieve aught but some trifling mitigation of its sufferings, and that there is hope neither in the future of the race nor beyond the grave. These doctrines are in every respect identical with the teaching of *Gautama*, whose influence in the Eastern World has been so potent. Berlin has answered Benares in the cry that life is evil, that hope is vain, that only in self-renunciation will the cravings of man find solace and rest. When we come to consider pessimism from the impartial point of view of scientific scrutiny, we become impressed with the conviction that it indicates less a normal development of human thought than a moral and intellectual disease—the outcome in all probability of the unhappy surroundings of the individual, or the untoward tendencies of the epoch. If life be stigmatized as worthless, the general sense of humanity will conclude that the speaker has probably made shipwreck of its worth.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE LETTSOMIAN LECTURES AT THE MEDICAL SOCIETY OF LONDON—THE METROPOLITAN HOSPITAL AND ITS PROVIDENT SCHEME—ST. JOHN'S HOSPITAL—THE LANDER INSTITUTION.

London, January 29, 1889.

Dr. Gowers' Lettsomian Lectures, at the Medical Society of London, have been devoted to the subject of "Syphilis and the Nervous System." In his first lecture he remarked that, comparing the various syphilitic lesions, not limiting our view to any single organ, we seemed to discern in them two elements—a process of inflammation, and a process of tissue-formation. The latter was seen in almost a pure form in gummata. The inflammatory or congestive element was almost or quite pure in many of the early skin eruptions, in some cases of iritis, and in many other lesions. Generally the two elements were combined and the most common condition was that often termed "hyperplastic inflammation." There seemed to be a tendency for the congestive or inflammatory element to preponderate in the early lesions, and the tissue-formation in the later—though to this the earliest lesions, the primary induration and the enlargement of the nearer glands, were apparent exceptions. It had been suggested that there was no real difference between these two elements, that the tissue formed in syphilitic processes differed but little from that formed in ordinary inflammation, and was combined in various quantity with the signs of inflammation. But the tissue formed presented certain characters not found in the same degree in ordinary inflammatory products, viz., its peculiar aspect (gluey appearance) when of recent formation, and its tendency to undergo certain changes—as to caseate or change to a contracting fibrous tissue. The latter change was of extreme importance in relation to the symptoms produced by which the lesion was manifested.

Syphilitic lesions might be divided into certain classes and we might expect to find these classes represented in the nervous system. First, there were morbid processes with characters that were peculiar, processes due to no other cause. Secondly, there were processes that were not peculiar; they resembled those due to other causes, though they were due to syphilis. Others had not even this peculiarity, but might be described as lesions due to many causes, of which syphilis was one. Speaking generally, the more the congestive or inflammatory element preponderated in a lesion, the less special were its pathological features. These depended chiefly on the element of tissue-formation. Necessarily also, as the latter needed time, the more acute a syphilitic inflammation was the less were its features distinctive. This was an important consideration.

Among the lesions of which syphilis was the only cause there were first the syphilitic growths (gummata) which grew commonly from the surface of the pia mater, and both compressed and invaded the substance of the brain or spinal cord. They were rare within the substance of the brain, and rare also, though sometimes symmetrical, on the cranial nerves. Secondly, there were the growths in the walls of the arteries which constituted one of the most important of the specific lesions. The remarkable correspondence in seat with atheroma must be noted. Certain of the pathological consequences of this arterial disease must not be passed over. The first was the necrotic softening that followed occlusion of the diseased artery, or more often that of a branch coming off from the diseased spot; it was by this softening that the disease most frequently caused symptoms. Occlusion, however, did not always lead to softening; induration might occur, especially in the cortex, and more often in children than

in adults. It was, no doubt, due to the arterial anastomoses being sufficient to prevent actual necrosis, though insufficient to maintain the integrity of the tissue. A second effect was the production of aneurism of the larger arteries, those that were the special seats of the disease. We knew two other causes of such intracranial aneurisms: one (very rare) was traumatic arteritis, the other was embolism which was probably the cause of three-quarters of these aneurisms before the degenerative period of life. In the remainder, in which there was no history of injury and no evidence of embolism, there was a history of syphilis in so many cases as to justify an opinion that most of them were due to it. A third and very rare effect of syphilitic disease was hæmorrhage within the substance of the brain. Inflammation that was specific in its pathological features was chiefly meningeal. Much new tissue was produced, and this might undergo either the caseous or the fibroid change. Either of the two membranes might be inflamed. In the dura mater the inflammation was usually diffuse, and the tissue formed underwent chiefly the fibroid change; in the pia mater the inflammation was usually local and the new tissue abundant. Inflammation of the substance of the brain or cord, that could be regarded as pathologically specific, was very rare. Very little was definitely known of inflammation of the cranial nerves that was pathologically specific. Dr. Gowers remarked that in speaking of specific pathological characters he had alluded only to those that could be recognized by the naked eye. He did not think that at present any confidence could be placed on histological characters only; even the structure of a gumma was not distinctive.

Were there any lesions of the nervous system that could be said to belong to the second class?—lesions that presented no pathological peculiarity, lesions that were due to other causes besides syphilis, and yet, when syphilitic in origin, had peculiarities of distribution not present when they were due to other causes. A few possibly might be of this character. One was a form of disseminated myelitis in which defined islets of inflammation occupied the white substance of the cord, chiefly near the surface, and were, perhaps, sometimes met with in the brain. This form had been described, as related to syphilis, by Julliard and Pierret, and the lecturer said he had himself met with one case. The facts at present did not prove specificity apart from distribution, and the same might be said of a form of multiple inflammation of the spinal roots, regarded as specific by Kahler, and of certain forms of sclerosis of the cortex of the brain (without arterial disease) met with by Barlow in infantile syphilis. It was not likely that this completed the series of obviously specific lesions. Many other morbid processes might yet be added when our knowledge of them was rendered adequate by a sufficient number of observations.

The chief morbid lesions of the remaining class—that in which the lesions were due to many causes of which syphilis was only one—were certain acute and subacute inflammations, and certain forms of chronic inflammation or focal sclerosis of the nerve-centres. In the same category must also be placed the important class of primary nerve-degenerations. The question of evidence was of the greater importance in regard to this class because we had to proceed to some extent without the aid of pathological observation, opportunities for the latter came but seldom, and it was doubtful whether, when they did come, they afforded any real help. In the case of these apparently simple lesions, only two kinds of evidence seemed at present within our reach. The first was such sequence as proved causation; the second was the evidence of therapeutics. Regarding the evidence of sequence the first important consideration was that isolated instances of sequence were no scientific proof of causation. Sequence could only prove causation by the strength of numbers. Dr. Gowers then discussed the question of the prevalence of syphilis, and said the first question was to ascertain the average frequency of past or present syphilis in males over twenty-five years of age. After giving some statistics from various sources and discussing them, he said that, whatever the ascertained proportion of syphilis it would assuredly fall short of the truth. With regard to the evidence from therapeutics, he said that the method was applicable chiefly to chronic lesions in which the influence of treatment could be clear and decided. Acute lesions, if slight, had too great tendency to subside; and, if severe, had effects of prolonged duration. Among the lesions to which these methods of proof applied there were, firstly, two important acute inflammations, those of the membranes of the brain and of the substance of the cord. Were these ever due to syphilis? That syphilis caused chronic meningitis was one of the surest facts in medicine, but it was still uncertain whether it also caused acute meningitis. The possible relation of acute myelitis to syphilis was one on which evidence was needed. The term included diseases widely different. We could distinguish acute transverse myelitis, subacute disseminated myelitis, and acute poliomyelitis. Not one of these was exclusively related to syphilis. Referring to the form of insular myelitis he had mentioned, Dr. Gowers said that, if syphilitic, it did not seem distinctly amenable to treatment, for in the cases hitherto observed the patients had died. With regard to acute transverse myelitis, he had seen several cases in which the disease followed syphilis—more that mere coincidence would explain. He had met with no cases of acute poliomyelitis suggesting a syphilitic origin. Acute ascending paralysis had been supposed to be a result of syphilis, partly on the ground of sequence, partly on that of recovery under the influence of mercury. The proportion of published cases in syphilitic subjects was certainly large and justified careful investigation. The evidence seemed to be against any relation to syphilis of true insular sclerosis, and only future observations could determine the question as regarded other extremely rare forms of diffuse sclerosis.

Until lately it was believed that the influence of syphilis was limited to the production of such lesions as those he had considered. But modern observations had shown that syphilis might cause degenerations of the nerve-centres. This relation was first asserted in the case of locomotor ataxy, but we were beginning to discern that there were other diseases that stood in a similar, although unequal relation to the disease. Dr. Gowers referred to the degenerative ocular palsies, simple atrophy of the optic nerve, ophthalmoplegia, general paralysis of the insane, and chronic muscular atrophy due to degeneration of the motor cells with or without the signs of lateral sclerosis. This was perhaps an occasional consequence of syphilis, and great care was necessary to avoid mistaking for it the atrophy that resulted from syphilitic pachymeningitis. The other common forms of degenerative diseases of the spinal cord were associated with syphilis in a proportion so small as to raise a doubt as to whether there was any causal relation between the two. Nevertheless, they occasionally followed syphilis when no other cause could be traced; this was especially true of the primary lateral sclerosis that probably often underlay spastic paralysis.

In his second lecture, after remarking that to the long list of maladies, the certain or supposed consequences of syphilis, should be added some of the functional diseases of the nervous system, Dr. Gowers went on to discuss the subjects of symptoms and diagnosis. The lesions of the nervous system were wholly beyond the range of observation, and we could not dispense with the careful consideration of each step we took. The essential steps were: 1. What was the seat of the lesion as indicated by the symptoms, and what was its nature as indicated by their course? 2. Was the process thus indicated one of those that might be specific? 3. Had the patient had syphilis? 4. Could any other cause of such a morbid process be traced? 5. We had to see whether the result of treatment confirmed our conclusion. The lecturer

then discussed these points in detail and then proceeded to the consideration of the symptoms of some particular syphilitic lesions. Speaking of syphilitic growths, he said a gumma caused symptoms like any other intracranial tumor of rapid growth, and focal symptoms due to the local influence of the growth. Their special features were never more than suggestive. They depended on the course, which was acute or subacute, and on the fact that gummata were more frequent in certain parts. Their seat was generally superficial, in the cortex or at the base, sometimes within the pons, seldom in the cerebellum, occasionally in the thalamic region, growing in from the side of the crus. Hence symptoms of cortical irritation were more frequent than in other tumors; convulsions were common and gave important information, from their local distribution or commencement or from the aura that equally indicated the spot at which the discharge began. The indication afforded by the course of the symptoms was chiefly negative. A very chronic growth was not likely to be syphilitic. We might often gain instruction from the optic neuritis so often present. Syphiloma caused an acute form of optic neuritis. A rapid growth never caused a chronic form of neuritis, although now and then a slow growth might cause an acute form. Hence while acuteness of the neuritis was of little diagnostic value, chronicity was distinctly opposed to the diagnosis of a syphilitic growth. The effect of treatment was of considerable diagnostic value. It usually caused a prompt diminution in the symptoms, but, to be of significance, this effect should be considerable and involve both the local and general symptoms.

The discussion about the Metropolitan Hospital shows no signs of abating. This hospital was originally styled the "Metropolitan Free Hospital," and was, I believe, free to all comers without letters of recommendation. When the new building was opened, a year or two ago, this was altered, and the out-patient department was made "provident" in character, patients being required to subscribe a smali sum regularly, per week. The word "free" was dropped from the name of the hospital. The immediate result was doubtless an augmentation of the finances of the hospital and some diminution of the crowds of out-patients. Another result, however, has been to injure the practices of the medical men in the neighborhood. At least, the latter allege that this has been the effect of the change. The storm which has been raised is one which will not, I think, be easily appeased, and in any case it is difficu't to imagine how it can be justifiable to convert a free hospital, erected solely bv public subscriptions and donations, into an institution of such a different character and limited local sphere of operations.

The action brought by the secretary of St. John's Hospital for Skin Diseases against a comic paper called *Ally Sloper* has terminated in a verdict for the plaintiff, with three hundred pounds damages.

The evidence showed considerable irregularities in the financial arrangements of the hospital, but the plaintiff was able to prove that he had committed no dishonest action as imputed to him by the defendants.

Possibly some of your readers may have heard of the Lander Institution in London for the carrying out of the "movement cure." This was at one time conducted on a scientific basis, and many medical men of position sent patients to it for treatment. Presumably it did not pay, for the institution has recently changed hands and has been annexed to a galvanic institution which is notorious as a hotbed of quackery. The medical men who patronized the Lander Institution are now horrified to find their names made use of by the quackish institution in question. We have probably not yet heard the end of the matter.

THE DAILY PAPERS state that another man has successfully extirpated a human breast and that the patient will probably recover.

ELECTROLYSIS IN STRICTURE.

(OPEN LETTER TO DR. NEWMAN.)

THROUGH THE EDITOR OF THE MEDICAL RECORD TO

DR. ROBERT NEWMAN.

SIR: In the recent discussion as to the merits of electrolysis in the radical cure of urethral stricture, it is possible that the failures of Professor Keyes may be attributed to faulty methods, while your own failure, in the case reported by Professor Keyes, is only conclusive as a single case.

It seems to us to be a comparatively easy matter to settle the disputed point (as you are aware, one of the greatest interest to the whole surgical world); *i.e.*, whether electrolysis is of any value whatsoever in the treatment of organic urethral stricture.

We would, therefore, be pleased to provide ten patients, subjects of organic stricture, as determined by a committee of competent surgeons, with a request that you will choose five from this number, and demonstrate the advantages of your method upon them. In the meantime we shall be glad to treat the remaining five by dilating urethrotomy. After treatment, we would request that there be no instrumental interference, of any kind, for a period of at least one month, when they shall be reexamined by the original examiners, and the condition of their urethras reported on, said report to be sent to every medical journal in the United States, and, as far as possible, abroad, with a request for publication.

Feeling you will gladly accept this proposition to vindicate the merits of your methods, we remain,

Sincerely yours,

GEORGE E. BREWER, M.D.,
WILLIAM K. OTIS, M.D.

VANDERBILT CLINIC, GENITO-URINARY DIVISION,
NEW YORK, February 6, 1889.

THE ASSOCIATION OF ACTING ASSISTANT SURGEONS, UNITED STATES ARMY.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: The Association of Acting Assistant Surgeons, United States Army, has met with the most cordial interest and support from many past and present acting assistant surgeons. We have representatives in most of the States and Territories. We find considerable interest manifested by the medical profession, and by relatives of deceased officers. The original intention was to obtain a complete list of all who have served as acting assistant surgeons, but this has been found impracticable, and our future work will be directed to accomplish the following objects: First to make careful and well-managed efforts to obtain a better position and to present a properly prepared "petition, signed by the acting assistant surgeons and endorsed by assistant surgeons, surgeons, and others who may favor the same, to the Military Committee of the next Congress, praying that acting assistant surgeons of the army (now serving), many of whom have served long and faithfully, performing all the professional duties of commissioned surgeons, and many of whom are past the age permitting them to apply for examination for commissions as first lieutenants in the medical corps, be commissioned assistant surgeons with the rank of second lieutenant of cavalry, not to be in the line for promotion, the pay (that of second lieutenant) not to be increased, and to be allowed forage for one horse; that at the expiration of the regular full term of service, or on account of disability, they be placed on the retired list of the army." This would be an act of tardy justice to men who have faithfully served and performed the duties of men whose pay is that of first lieutenants, captains, and majors. Every man in the employ of the United States Government should be entitled to justice, and, in case of trouble with his superior officer, to a fair trial before being deprived of his position and means of subsistence.

As it is at present, an acting assistant surgeon may be dismissed at any time, without the right to appeal for a trial or to demand that ordinary justice be afforded him. The objects aimed at in this petition are honorable and just, and would in no degree conflict with discipline or have other than a wholesome effect upon the medical corps in general.

The association will, as soon as sufficient funds can be obtained, publish a little book giving the history of the corps and the personal and medical histories of the members of the association. It will contain histories of battles in which acting assistant surgeons have taken part, and of those who lost their lives in the service of their country. It will also endeavor to collect funds to purchase and place in the military chapel at Fort Leavenworth, Kan., a suitable tablet in memory of the acting assistant surgeons of the United States Army who have fallen in the line of duty. Many interesting and valuable memoirs of acting assistant surgeons have already been received, not only from those who are members of the association, but from friends of deceased surgeons. All past and present acting assistant surgeons should join the association as soon as possible to aid in the worthy objects we have in view. It is hoped that a meeting may be held in Newport during the meeting of the American Medical Association.

At this meeting, although few active assistant surgeons can be present, the Association will discuss the best methods to aid in improving the status of those who are now serving, and do everything in its power for their welfare. The badge of the Association is the Geneva Red Cross. The enrolment fee is $1, and the yearly dues are $1. Application blanks will be forwarded by the Recorder,

W. THORNTON PARKER, M.D.

322 BENEFIT STREET, PROVIDENCE, R. I.

THE IMPROVED WINGHURST INFLUENCE MACHINE.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Last spring Professor Winghurst exhibited in London an entirely new form of influence machine, which was unanimously admitted by experts to be in every respect superior to any previous style of static machine. It was natural that scientists, and especially physicians employing franklinic electricity, should be attracted by the glowing accounts given of Professor Winghurst's invention, but I believe the credit of having manufactured the first static machine on Winghurst's principles is due to Mr. Thomas Harris, of this city, an electrician of remarkable skill and exceptional ingenuity. The original machines, while superior to either the Toepler or Holtz, still lacked the necessary features to insure their being freely excited under all atmospheric conditions, and it was to this point in particular that Mr. Harris turned his attention, with the result that the machine in my office never fails to yield an ample quantity of electricity at all times without any warming of discs, the use of chloride of calcium, or other accessories, without which no owner of a Holtz or Toepler can be sure of his machine doing efficient work.

The improved Winghurst machine, as it stands to-day, differs in some respects from the first machine built by Mr. Harris for my friend Dr. Younghusband (to whom the credit is undoubtedly due of being the first to appreciate the superiority of the Winghurst) as it has been found that by a different arrangement of the sectors on the glass disks a much longer spark is obtained, while the certainty of the machine readily becoming excited is by no means diminished.

So far the machines have been made with six revolving glass disks, each pair revolving in opposite directions, the size of the disks being twenty-four, thirty, and thirty-three inches respectively. The machine in my office is composed of thirty-three-inch disks, and readily yields a spark a foot long between the discharging rods of the prime conductors, while for static insulation, or, as some prefer to call it, general franklinization, a speed of fifty revolutions a minute is ample for the average patient. For the indirect or direct spark I increase the speed to one hundred. Aside from the annoyance of caring for the old style of machines, the uncertainty of being able to treat patients at all seasons of the year caused the use of static electricity to be confined to comparatively few, although I hardly think any will deny its many advantages over faradism or galvanism. Now that a perfectly reliable machine has been produced it is safe to predict that in a very short time franklinism will regain that place in electro-therapeutics which but for the inconveniences enumerated it would never have lost. In my estimation, and I have had more than ample facilities for proving my assertion, I regard the Winghurst machine with the Harris improvements as immeasurably superior to all other forms of static machines, as I do the use of the Edison incandescent light wire for galvanic work to the filthy and irritating bichromate battery.

Respectfully yours,

H. MONTAGUE, M.D.

271 WOODWARD AVENUE, DETROIT, MICH.,
January 25, 1889.

THE MICROSCOPE AND THE NEW YORK PATHOLOGICAL SOCIETY.

BY JOHN C. PETERS, M.D.,

NEW YORK.

A SHORT time ago I received a note from the President containing these words:

"Was Dr. Alonzo Clark the first to bring the microscope into use in pathology in New York? A story of the early dawn of microscopic insight into lesions, in New York, would read like a novel to most of us. Suppose you sleep over this, and see what comes into your mind in the morning. Very sincerely yours,

"W. P. NORTHUP.

"To J. C. PETERS, M.D."

It must be borne in mind that Queckett's book on the use of the microscope was not published until 1848; Robin's in 1849, when Oliver Wendell Holmes was singing about thus:

"I was sitting with my microscope, upon my parlor rug,
With a very heavy quarto and a very lively bug,
I lost my focus—dropped my book—the bug, which was a flea,
At once exploded, and commenced experiments on me."

Virchow's book did not appear until 1854, nor Beale's "Application of the Microscope to Clinical Medicine" until 1859.

At the thirteenth meeting of the Society, held at Dr. Willard Parker's, at the corner of Broadway and Eighth Streets, on December 24, 1844, the following was recorded:

"So many specimens were presented, and the wonders of the microscope were of such absorbing interest, and the supper was so good, that the Secretary [Dr. William C. Roberts] found himself quite unable to record all the proceedings.

"*Present:* Drs. Parker, Markoe, Sabine, Sayre, Crane, Middleton Goldsmith, Roberts, Watts, Macnevin, W. W. Jones, Isaac E. Taylor, John C. Peters, Cock, Moses, Tomes, Metcalfe, and Alonzo Clark—in all, 17."

On January 22, 1845, Dr. Alonzo Clark demonstrated the difference between atheroma and tubercle under the microscope, and reported about Dr. Taylor's specimen.

On April 23, 1845, Drs. Markoe, Sabine, Taylor, and Roberts were made a committee for the examination of morbid specimens, and Dr. Taylor was directed to keep his eyes open for meconic membranes.

May 14, 1845. A diseased testis was referred to Dr. Clark for microscopical examination. May 28th, $135

was subscribed for the establishment of a museum, the purchase of a microscope, and a dissecting case. [The microscope was not purchased until 1851.]

December 10, 1845. Dr. Clark gave a microscopical description of so-called false membranes from the bowels; he said they were merely amorphous material with mucous globules, and not at all organized; he also said the microscope could now distinguish the difference between lymph and tubercle.

December 24, 1845. Rice-like bodies from a ganglion were decided by two incipient microscopists to be hydatids, but by Dr. Clark to be rolled-up epithelium.

February 25, 1846. Dr. Clark demonstrated microscopically the difference between tubercle and a fibrinous deposit.

The microscope excited so much interest that on July 8th, when the time for the usual summer recess came round, it was resolved to continue the meetings until further notice. A microscopical account of a polypus of the uterus escaped the Secretary's ears while he was looking into the microscope.

October 27, 1846. Dr. Van Buren showed trichina spiralis under the microscope. A secretary *pro tem.* recorded cases of *croup de soleil, scrofulous carcinoma, and ensilage cartilage!!* and there were only thirteen cents in the treasury.

April 24, 1847. Dr. Charles E. Isaacs gave the microscopical appearances in a case of seminal emissions; the urine was full of filaments of mucus, nucleated cells, and granules; urinary salts crystallized on the glass slides, and many spermatozoa were found. On standing, the urine exhibited many *vibriones*, or small attenuated particles, like grains of sand, all moving very rapidly and "revolving on themselves," very much like bacteria.

May 27, 1847. Dr. Van Buren, in a case of supposed cancer of the leg, reported the presence of caudate corpuscles [connective-tissue cells?] as among the most characteristic microscopical appearances of encephaloid cancer. Dr. Clark denied this, and said that cancer could not yet be diagnosed by the microscope alone. He also reported the examination of a supposed fatty tumor of the thyroid gland; it was not fatty, but he could not decide exactly what it was; still it was made up of small vesicles separated by tough filaments of cellular tissue and blood-vessels.

June 9, 1847. Dr. Clark repeated that the so-called caudate corpuscles could not be depended upon as microscopically characteristic of cancer.

June 23, 1847. Dr. Isaacs reported a steatomatous tumor as composed of one-third cholesterine and two-thirds of epithelial cells. Another tumor was made up of amorphous matter, granules of carbonate of lime, and something like pus-cells. Dr. Metcalfe moved that a suitable microscope be procured for the Society, and he and Dr. Isaacs were directed to buy one, but this was not done until 1851; in the meantime many of the members got microscopes for themselves.

July 14, 1847. Dr. Clark pointed out the difference between fatty and lardaceous livers. Malignant tumors were presented by the score, but the gross appearances were generally relied upon in the diagnosis of them. Drs. Markoe, Sabine, Metcalfe, Van Buren, Isaacs, Clark, Sayre, and others distinguished themselves by their accurate knowledge of all the diagnostic signs of malignant disease. Drs. Markoe and Van Buren laid some stress upon the lobster-like and halibut-flesh-like look of encephaloid disease when macerated. These energetic men often presented three, five, seven, or more specimens at one meeting.

December 22, 1847. Dr. Clark examined a supposed encephaloid tumor from the rectus femoris muscle, removed by Dr. Van Buren; he could make nothing out of it, except it was not medullary.

December 29, 1847. Dr. Edward Hall presented a congenital atrophied kidney. Dr. Clark had never seen any structure microscopically like it; it was formed of a unique mass of thickened nucleated cells, very uniform in size and appearance, which acetic acid did not break up into granules, but flattened out into distinct cells, the size of pus-cells. Drs. Clark and Isaacs had now become the most prominent microscopists in the Society, according to Dr. Sayre. Dr. Isaacs had been demonstrator and professor of anatomy, and the assistant of Drs. Van Buren and Batchelder. He prepared specimens with the greatest care for several or more of the members, and posted himself well up in the literature of all interesting subjects referred to him. The Secretary, Dr. William C. Roberts, was also untiring in his efforts to post up the Society on every disease and moot point in pathology which came before it, especially diphtheria.

January 26, 1848. Dr. Metcalfe reported microscopically on fibrinous and other deposits in the spleen. This was a gala evening, and Dr. Van Buren described the minute appearances of a tumor from an aponeurosis near the ankle; it was composed of a little fat and more white, solid fibrous tissue, traversed with blood-vessels, but supposed not to be malignant. Dr. Clark dwelt lovingly on a case of melanosis of the liver, which differed from anything he had ever seen. It was granulated, and every granule had another dark granule of its own; millions of microscopic particles or granules made up the substance of the tumor. The fluid from a cyst in the breast was examined by Dr. Isaacs for Dr. James R. Wood; nine-tenths of it coagulated, and most of it was made up of blood-corpuscles. A tumor, seemingly malignant by the microscope and the eye, was reported as the first which had been removed with the aid of chloroform. The Society had now been meeting for several years at the College of Physicians and Surgeons. Drs. Roberts and Sayre were the Committee on Refreshments, and furnished much ale in a big tin-pail, with few tumblers and still fewer towels, while crackers and cheese in brown paper bags, came from the corner grocery. These viands were partaken of at ten o'clock, and then the Society continued its sessions till midnight. For the first eighteen months Drs. Sabine, Markoe, Moses, Sayre, J. C. Peters, Goldsmith, Parker, and Watts were the most active members. In 1846 and 1847 Drs. Van Buren, Alonzo Clark, Metcalfe, Sabine, Markoe, and J. R. Wood came to the front. They seemed to divide the meetings among themselves; every fourth or fifth meeting Dr. Clark would come with from four to ten carefully prepared and well-studied-out specimens, which the others would discuss and criticise. Then we would have a Markoe night, with a nearly equally full programme, followed by Sabine, Van Buren, Swett, Metcalfe, Sayre, Parker, and others, in due succession.

February 9, 1848. Dr. Robert Watts gave a microscopical study of a tumor from the back of an infant; one-half was made up of capillary vessels, set in a gelatinous, colloid (myxomatous?), amorphous mass, with well-formed nucleated cells lying loose in it, but nothing like fibres were to be discovered. This was thought to be more like fungus hæmatodes than encephaloid disease, and Dr. Clark had no doubt that anyone learned in pathology would think so too; but Dr. Gilman doubted whether malignant disease had ever been found in a fœtus. Dr. Sayre was sure it had, as he had presented more than one specimen. Dr. Metcalfe exhibited a heart from a syphilitic and drinking man, and it was decided that valvular disease never arose from syphilis. The man reformed, and, sad to say, became the victim of profusely bleeding piles. The microscope was appealed to to decide the difference between typhus and typhoid petechiæ and spots. Drs. Metcalfe and Isaacs examined the lymph of dysentery; but got no satisfaction from the microscope in a case of cancer of the brain. Drs. Van Buren and Isaacs collected all the known cases of colloid cancer of the knee-joint, in a paper most elaborately drawn up. The dues, one dollar a year, were increased fifty cents more, to pay for postage stamps.

February 28, 1849. Dr. Parker presented a cystic tumor of the breast, which Dr. Clark considered safest to

regard as cancerous, although he repeated that the time had not yet come when our microscopical knowledge enabled us to decide positively and readily between simple, hard, fibrinous, and cancerous tumors.

Drs. Swett, Watts, and Roberts resembled each other very closely, and might have passed for triplets; even their gold spectacles were much alike. Dr. Isaacs was one of the most gentle of men; his most emphatic expression was apt to be: "Pooh, de diddle de dee." He died during the presidency of Dr. Alfred C. Post, and is known to all the older members of the Society by the beautiful tribute which was paid to his memory by Drs. William H. Van Buren and George F. Shrady.

Next to him and Dr. Alonzo Clark, Drs. Van Arsdale and John C. Dalton were the earliest workers with the microscope; so writes Dr. Gouley.

Dr. Markoe writes: "Dr. Clark was the first and for sometime the only member of the Pathological Society who accompanied the cases he presented with a full account of microscopical appearances."

Many of the beginners seemed to delight in discovering what was called "nucleated and caudate cells," the latter were some times spindle cells. The so-called fibro-nucleated tumors were great favorites as they were held to be non-malignant, but recurrent fibroids were great puzzles.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 10 *to February* 16, 1889.

THE Medical Director will proceed to Fort Buford, Dak., on public business connected with the Medical Department, and, upon completion of duty, will rejoin his station. Par. 8, S. O. 14, Headquarters Department of Dakota, St. Paul, Minn., February 5, 1889.

LORING, LEONARD Y., Major and Surgeon. By direction of the Secretary of War, the leave of absence on surgeon's certificate of disability granted in S. O. No. 6, January 18, 1889, Department of Arizona, is extended six months on account of disability. Par. 23, S. O. No. 35, A. G. O., Washington, February 11, 1889.

AINSWORTH, FRED. C., Captain and Surgeon. By direction of the Secretary of War, to proceed to New York City and Brooklyn, N. Y., on public business. Par. 15, S. O. 38, A. G. O., Washington, February 14, 1889.

MEARNS, EDGAR A., Captain and Assistant Surgeon. Relieved from temporary duty at Fort Pembina, Dak., and to rejoin his station, Fort Snelling, Minn., without delay. Par. 4, S. O. 14, Headquarters Department of Dakota, St. Paul, Minn., February 5, 1889.

Official List of Changes in the Meaical Corps of the United States Navy for the week ending February 16, 1889.

BERTOLETTE, D. N., Surgeon. Detached from the Thetis and to wait orders.

HENNEBERGE, L. G., Passed Assistant Surgeon. Detached from the Minnesota and ordered to the Thetis.

MARMION, R. A., Surgeon. Detached from the Juniata and to wait orders.

OGDEN, F. N., Assistant Surgeon. Detached from the Juniata and to wait orders.

STOKES, CHARLES F., Assistant Surgeon. Ordered to the Minnesota.

WILSON, GEORGE B., Assistant Surgeon. Ordered to the Navy Yard, Mare Island, Cal.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending February 17, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	7	2
Scarlet fever	347	41
Cerebro-spinal meningitis	1	0
Measles	284	22
Diphtheria	205	55
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

CUTANEOUS SWELLINGS AND MENSTRUATION.—A recent number of Volkmann's *Sammlung Klinischer Vorträge* contains an article by Professor Ernst Börner, of Graz, on the cutaneous swellings sometimes observed in women accompanying menstruation and the menopause. The author remarks in connection with these two processes he has observed distinct, transient, local swellings of the skin, and especially of the face. But without any neuralgic accompaniment, at these times cutaneous swellings sometimes are noticed strikingly like urticaria; they may also sometimes be easily mistaken for erysipelas. Itching is generally absent, and the swelling is sometimes confined to the face, and sometimes it is diffused over the whole body. He notes two distinct forms of this affection, one characterized by increased local warmth and hyperæmia. This form is caused by temporary paralysis of the vasomotor nerves or by reflex excitation of the dilators, with increased influx of blood. The conditions under which transudation takes place through the capillary walls are suddenly changed thereby, transudation in the neighborhood is increased, and distinct swelling of the part implicated takes place. This form is met with principally in poor-blooded women, but sometimes also in those who are healthy. The second form shows no redress or increased heart. The condition in these cases is dependent on increased blood-pressure of one of the large blood-vessels, that disappears before compensatory local hyperæmia can be set up. Before this compensatory hyperæmia has time to take place, the increased pressure communicated to the capillaries has already caused increased transudation in the surrounding tissues. In this class of cases the affected parts often feel colder than the neighboring healthy parts. These cutaneous swellings disappear of themselves at the close of the period. The fact that the whole body may be implicated renders it clear that the cutaneous vessels generally have a certain relationship to the vascular system of the genital tract.—*The Medical Press.*

CARCINOMA AND ATROPHY OF THE STOMACH.—At a recent meeting of the Berlin Medical Society, Dr. Rosenheim, in a paper on the subject of Cancer of the Stomach, said that in fourteen out of sixteen cases of this disease free hydrochloric acid was constantly absent from the gastric secretion. In one case, however, there was an excessive amount. This was a case which had for years shown symptoms of gastric ulcer. Seven months before death there was an increase of pain and vomiting, and a tumor could be felt in the pyloric region. It was found to be an example of "cancer atrophicans," and an explanation of the presence of a large amount of hydrochloric acid was offered in the fact that the mucous membrane generally was not involved. For, as a rule, there is associated with carcinoma a marked condition of atrophy of the gastric mucosa, and it is to this that the deficiency in acid has been ascribed by Ewald and others.—*The Lancet.*

The Medical Record

A Weekly Journal of Medicine and Surgery

MEDICAL LIBRARY OF THE BOSTON CITY HOSPITAL

Vol. 35, No. 9 NEW YORK, MARCH 2, 1889. Whole No. 956

Original Lectures.

ACUTE PANCREATITIS.

A CONSIDERATION OF PANCREATIC HEMORRHAGE, HEMORRHAGIC, SUPPURATIVE, AND GANGRENOUS PANCREATITIS, AND OF DISSEMINATED FAT-NECROSIS.*

BY REGINALD H. FITZ, M.D.,

SHATTUCK PROFESSOR OF PATHOLOGICAL ANATOMY IN HARVARD UNIVERSITY AND PHYSICIAN TO THE MASSACHUSETTS GENERAL HOSPITAL.

(Continued from page 204.)

PART II.

THE peritoneum usually shows no alterations, although evidence of recent peritonitis may, at times, be found.

The microscopical changes to be found in the diseased pancreas have been sufficiently detailed in the reports of Cases XXVIII. and XXXIII. They consist essentially in the evidence of an extensive hemorrhagic infiltration limited more particularly to the interlobular tissue. Also in the presence of cellular and fibrino-cellular formations in the same tissue. Smaller accumulations of round cells and hemorrhages may be found within the lobules, and the ducts may be filled with indifferent cells. The appearances characteristic of a coagulation-necrosis, also thrombosis of the smaller veins, are to be found in many lobules as early as the third day, as are all the other changes above described. The spongy condition of the hemorrhagic region and the numbers of associated bacteria are indicative of putrefactive changes. Whether these are of ante- or post-mortem origin, the evidence at hand does not decide. Finally, the discovery by Osler and Hughes[58] may be mentioned, where an increased number of leucocytes was found in the semilunar ganglia, and an indistinctness and cloudiness of the ganglion-cells.

In summing up the clinical and anatomical characteristics of these cases we have the following brief description of an affection which wholly justifies the term acute hemorrhagic pancreatitis.

It is a disease which may take place without any well-defined cause, but is most likely to occur in persons who have had previous attacks of gastric or gastro-duodenal dyspepsia.

It begins with intense pain, especially in the upper abdomen, soon followed by vomiting, which is likely to be more or less obstinate, and not infrequently by slight epigastric swelling and tenderness, with obstinate constipation.

A normal or subnormal temperature may be present, and symptoms of collapse precede by a few hours death, which is most likely to occur between the second and fourth days.

The gross lesions are due to hemorrhage in and about the pancreas, and the microscope shows cellular and fibrino-cellular exudations in its interstitial tissue, and necrosis of its lobules.

SUPPURATIVE PANCREATITIS.—In order to more fully appreciate the relation which hemorrhagic pancreatitis may bear to pancreatic inflammation and hemorrhage, it becomes necessary to consider the evidence in favor of other varieties of acute pancreatitis. Although the authorities of the present day make but little mention of a suppurative inflammation, Lieutaud,[59] in the last century, alludes to cases of pancreatic abscess reported by Bartholinus, Tulpius, Aubert, and Patin.

To these may be added those of Riolanus, Bonz, and Gautier, referred to by Ancelet.[60] Clässen[61] states that Blancard, in 1688, described the occurrence of small, purulent points on the surface of the pancreas of a child who died of small-pox. Also that Tonnellé found a suppurating pancreas in two cases of puerperal fever. But the cases thus referred to are almost invariably of but little value for purposes of comparison. Döring,[62] for instance, found the enlarged and indurated pancreas connected with an abscess in the mesentery of the transverse colon, which held some four ounces of offensive yellow pus, apparently proceeding from the pancreas. But the evidence is wanting to show that the pancreas was the source of the disease.

Portal[63] saw the pancreas soaked in pus in the body of a man who died after a violent attack (of gout ?). Again,[64] he found the contents of the abscess often enclosed, as in a pocket, in a membranous sac formed by the cellular tissue which covers the pancreas. He declares that he has seen more than a quart (*deux livres*) thus enclosed. Here, again, the question may be raised as to the nature of the abscess and its relation to the pancreas. His mention[65] of the man who died after extirpation of the testicle and ligature of the spermatic cord, is worthy of note. A large quantity of pus was found in the cord, and a considerable abscess around the pancreas.

It is supplemented by the case reported by Moore,[66] of a young man who was seized with a sudden abdominal pain, which in the course of twenty-four hours became worse, and fixed in the right iliac fossa. There was vomiting, constipation, and chills. For several days the patient was not confined to his bed, but he died on the nineteenth day. The diagnosis was typhlitis. The perforated vermiform appendix led into an abscess which had penetrated the iliac muscle and communicated with the cæcum.

There were one large and several small abscesses in the pancreas. The two main veins were filled with thrombi; there was a portal thrombosis continued to the liver, and a parietal thrombosis of the vena cava.

There were numerous small abscesses in the brain.

The case reported by Percival,[67] as of pancreatic abscess, must be regarded as of somewhat doubtful nature. A man of middle age was sick for three months with jaundice, bilious vomit, and a hard epigastric tumor.

Blood, and finally, fetid pus were discharged from the bowels. Eventually anasarca occurred. The epigastric tumor proved to be the greatly enlarged pancreas, which was scirrhous, and contained a considerable abscess.

The common duct was impervious from the pancreatic pressure, and the liver was "much diseased."

Andral[68] found two small abscesses in the middle of the pancreas.

In order to determine the relative frequency of suppurative pancreatitis, the conditions of its occurrence, its symptomatology and results, the cases in the table on pp. 228 and 229 have been collected.

* The Middleton Goldsmith Lecture for 1889, delivered before the New York Pathological Society, February 16, 1889.

[58] Case XXIX.

[59] Op. cit., i., 244. [60] Maladies du Pancreas, 1804, 19, 20.
[61] Op. cit, 64.
[62] Altenburger Jour., 1817; Clässen, op. cit., 264.
[63] Anat. Med., 1803, v., 352. [64] Op. cit., 353. [65] Op. cit., 353.
[66] Trans. Lond. Path. Soc., 1882, xxxiii., 186.
[67] Trans. Asso. K. and Q. Coll. Phy., Ireland, 1818, ii., 132.
[68] Précis d'Anat. Path., 1829, ii., 582.

Seventeen Cases of Hemorrhagic Pancreatitis.

No.	Authority.	Sex.	Age.	Antecedents.	Symptoms.	Lesions.
XVII.	Löschner: Weitenweber's Beitr. z. Med., 1842. Schmidt's Jahrb., 1843, xxxix. 31.	M.	26	Strong. Drinks and smokes. Five years ago, from excesses, attacks of belching, nausea, cardialgia, colic, diarrhœa, burning sensation in upper abdomen.	For 16 days colicky attacks in upper abdomen, becoming more frequent. In past 5 days paroxysms have become more intense; nausea, vomiting, constipation, fever, anxiety, now collapsed. Burning, stabbing, griping pain from duodenum to spleen, toward navel, back, and right shoulder, most severe along curvature of stomach. No stool for several days. Upper abdomen hot, swollen, sensitive. Death in 8 hours.	Pancreas doubled in size, firm, violet. Lobules much enlarged, dark, injected, interstitial tissue, infiltrated with blood. Here and there in the blood, between the lobules, a finely granular, yellow exudation. Connective tissue around the pancreas swollen, friable, bluish-purple, infiltrated with blood.
XVIII.	Oppolzer: Allg. Wien. Med. Zeit., 1858, xlv. Mediz. Neuigk., 1859, ix. 105. Wiener. Med. Woch., 1867, vii. 7.	M.	Adult, young	Strong.	Sudden cardialgia, without known cause, becoming violent on strong, epigastric pressure. Constant bilious vomiting, obstinate constipation. High fever, quick pulse, collapse. Death in 3 days or more. No evidence of poisoning. Diagnosis, perforating, gastric ulcer.	Pancreas at least doubled in size, dark-red. Hemorrhage between the lobules, and much extravasated blood in the vicinity of the pancreas, between the mesenteric folds.
XIX	Hooper: Beale's Arch. of Med., 1860, ii. 282.	M.	44	Active, fat, florid, temperate.	Sudden, severe pain below left breast, nausea, constipation, tympany, weak pulse. 2d day: Black vomit, dejection (alvine), exhaustion. Death in collapse on the third day.	Pancreas enlarged, hard, friable, contained several small, scattered extravasations of blood. The seat of several lobules occupied by large lobules of fatty matter, from which much margarine crystallized out. Very many, small, granular cells in the interval between follicles.
XX	Hilty: Corresp.-Bl. f. Schweiz Aerzte., 1877, vii. 666.	M.	30	Strongly built, fat, looked fond of spirits. In past few years frequent palpitation and occasional dyspnœa.	Sudden, abdominal fulness and tension attributed to new beer. Anxious, restless, uncomfortable. Feeble pulse, rapid breathing, cold sweat, subnormal temperature. Then abdominal pain, distended, tympanitic, upper abdomen. Nausea. 2d day: Collapse, spontaneous dejection, no fever. Sudden, violent delirium. Diagnosis, peritonitis from perforation. Death in 36 hours.	Pancreas doubled in size, firm, dark-violet. Extensive interlobular, hemorrhagic infiltration. In the head many nodular hemorrhages as large as cherry-stones, marked bloody infiltration of the peripancreatic tissue.
XXI	Guillery: Ueber d. Entz. d. Pankreas. Inaug. Diss., 1879, 26.	M.	....	Intemperate.	In delirium tremens for a few days, then death.	Pancreas trebled in size from presence of fat-tissue within and around the gland. Minute hemorrhage in places. Microscopic examination showed hemorrhage between the cells, and a small-celled infiltration in the interstitial tissue. A peripancreatitis with gradual extension into the parenchyma.
XXII	Farge: Bull. Soc. de Med., 1880-82, N. S., viii. 188.	M.	42	Fat, temperate. Has had repeated attacks of severe abdominal pain, with bilious vomit. Watery vomit every morning for some time, and before present attacks.	Severe abdominal pain, worst in left side on palpation. No vomiting. Subnormal temperature. Abdomen tympanitic, distended, especially below navel. 2d day: Pain less, pulse weak. Death.	In head of pancreas a cavity with butter-like contents. A hemorrhagic mass in the tail, apparently the starting-point of a peritonitis, along the pancreas. Omentum thickly strewn with small, dirty-white, rounded, flattened patches, composed of cheesy-degenerated fat.
XXIII.	Whitney: Boston Med. and Surg. Jour., 1881, cv. 592.	M.	Adult.	Robust; occasionally easily relieved, painful indigestion. A year ago jaundice, lasting two and one-half months, accompanied with some epigastric pain.	Epigastric pain, unable to continue occupation. 2d day: Symptoms of peritonitis with great prostration. Death on the following day.	Pancreas dirty-red, containing brownish-black nodules, mottled with opaque white spots. The microscope showed diffuse blood, and amorphous clumps of the same. The white spots due to short, staff, or spindle-shaped crystals in the fat-tissue. Outline of gland-cells lost, nuclei indistinct. Peritoneum reddened.
XXIV.	Balser: Virchow's Arch., 1882, xv. 525.	M.	54	Enormous quantity of subcutaneous fat.	Sick for 2 or 3 days before death with slight, gastric difficulties. Soon followed by vomiting, symptoms of peritonitis and collapse. Diagnosis, internal strangulation.	Pancreas enlarged, soft, pale, dirty-yellow, speckled with numerous opaque-white streaks and spots, also dark-brown and reddish-black spots. Numerous ducts filled with blood-clots. Head of pancreas infiltrated with blood, and surrounded with clotted blood. Numerous hemorrhagic patches in the mesentery. Also opaque, bright-yellow patches, up to the size of a cherry-stone in the subperitoneal fat of the abdominal walls, and in that of the omentum and mesentery.
XXV.	Haidlen: Cbl. f. Gyn., 1884, viii. 609.	F.	33	During first pregnancy much gastric disturbance and headache. In the last three months violent attacks of abdominal pain, suggesting impending perforation. Slow recovery. Two attacks during the five weeks after delivery.	Sudden, violent pain near pylorus, 37 days after delivery. Occasional vomit, some collapse, no fever. Sensitive epigastrium, abdomen moderately distended. The violent, epigastric pain persisted, meteorism took place. Collapse and death in 5 days.	Pancreas enlarged, almost wholly transformed into a brownish-red, bloody mass. The microscope showed a small-celled infiltration and hemorrhage which may have continued for some days. Duct somewhat dilated. Adjacent omentum slightly suffused with blood.
XXVI.	Eichhorst: Eulenburg's Real-Encyclopädie, 1885, ii. 434.	....	....	.....	The patient died of ileus, ...	There was a hemorrhagic pancreatitis and peripancreatitis. The pancreas was as large round as a man's arm, and was so wedged between the spleen and the duodenum as to completely obstruct the latter.
XXVII.	Amidon: Boston Med. and Surg. Jour., 1886, cxv. 594.	M.	Adult.	In perfect health..	Sudden nausea, vomiting, and slight diarrhœa. Some hours later severe gastric and abdominal pains and cramps. 2d day: Pains more frequent, intense thirst; collapse. Slight albuminuria. 3d day: No dejection. Subnormal temperature. Unexpected death on the fourth day.	Pancreas enlarged, hard. Between it and the duodenum, encroaching on the former, but adherent to both, was a flattened mass of blood an inch and a half in diameter.
XXVIII.	Pinkham and Whitney: MS. Notes, 1886.	M.	40	For a year or more general malaise and lack of strength, attributed to indigestion.	Epigastric pain, vomiting, weak heart. Death on the sixth day, preceded by cessation of the pain and vomiting.	Pancreas very large, on section, dark-red, streaks, and patches between the lobules. The fat tissue of the abdomen, especially near the pancreas studded with opaque, white spots of fat-necrosis, with a well-defined, blackish edge. Colonies of micrococci found near these spots.
XXIX.	Osler and Hughes: Trans. Phila. Path. Soc., 1887, xiii. 24.	M.	58	.....	Intense epigastric pain for several days. Sensitive epigastrium, haggard, emaciated. Cancer of stomach suspected. Found asleep after breakfast with Cheyne-Stokes breathing, almost imperceptible pulse. Death in less than 3 hours after discovery in the above condition.	Universal, interstitial, pancreatic hemorrhage, with clots in the tail. In the body of the gland the acini appeared as grayish-white areas surrounded by the dark-red hemorrhagic exudation. Increased round-cells in the semi-lunar ganglia, whose ganglion-cells were cloudy and indistinct. Œdematous Pacinian corpuscles behind duodenum and pancreas.
XXX.	Hirschberg: Berl. Klin. Woch., 1887, xxxiv. 287.	F.	56	Very fat.....	Attacked with vomiting, abdominal pain; complete obstruction. A swollen, intestinal convolution to be felt in the right side. On the 4th day, sudden collapse, mind clear, abdomen distended, very painful, no palpable tumor. Laparotomy. Death 5 hours later.	Pancreas greatly enlarged, black from hemorrhage, fatty degenerated. General peritonitis with adhesions, and hemorrhagic exudation. Yellowish-white spots, up to the size of lentils, were seen beneath the parietal and visceral peritoneum, both at the operation and after death. They were composed of crystalline, fatty acids.

Seventeen Cases of Hemorrhagic Pancreatitis—Continued.

No.	Authority.	Sex.	Age.	Antecedents.	Symptoms.	Lesions.
XXXI.....	Birch and Hirschfeld: Lehrb. d. Path. Anatomie 3te Aufl., 1887, ii. 639.	M.	38	.....	Sudden, violent, colicky pains above the navel. Soon, high fever, delirium, copious green vomit, and death on the 2d day.	Pancreas markedly enlarged, dirty, brownish-red color. On section, dirty, grayish-red plugs were squeezed from the lobes and lobules. The microscope showed the interstitial tissue infiltrated with round cells, and red blood-corpuscles. The epithelium enlarged, granular, in many acini transformed into a finely granular detritus, a bloody, ichorous fluid in the pancreatic duct. Considerable swelling, hyperæmia, and ecchymosis of the duodenum and jejunum.
XXXII.....	Birch and Hirschfeld: Op. cit.	M.	42			
XXXIII....	Putnam and Whitney: MS. Notes, 1888.	M.	48	Abundant and fat tissue. Hemiplegic for several years. Has had several attacks of gastric pain, not lasting more than a day.	Awoke with severe gastralgia, vomiting, later collapsed. 2d day: Restless, but comfortable with morphia. Hiccough, vomiting some dark, red lumps. 3d day: Rapid breathing, cyanotic, collapse. Death.	Pancreas doubled in size. On section, dark-red, mottled with opaque, white spots. Fat-tissue near pancreas, and in root of mesentery discolored red. Mesenteric fat-tissue showed numerous opaque, white spots. The fat-tissue in places discolored; soft, and foul-smelling. Thrombosis of splenic, pancreatic, and mesenteric veins. No infiltration about semi-lunar ganglion.

They are twenty-two in number. One was of recent occurrence in Boston, for the notes of which I am indebted to Drs. Sears, Thompson, Jones, and Whitney.

The more detailed history of Case LV. is as follows: The patient was thirty-nine years of age, rather fat, intemperate. For a year or two before her fatal illness she had suffered more or less from poor appetite, distress after eating, wind in the stomach, and costiveness.

She was seized with sudden epigastric pain, without known cause, followed by vomiting, and the bowels were constipated. On the following day the pain became worse, but was somewhat relieved after vomiting. The next day, after a dinner of roast goose and cabbage, the pain became much aggravated. It was intense on the fourth day, and there was constant hiccough and vomiting. The epigastrium was sensitive, and the abdomen swollen. Pulse, 120; temperature, 103.4° F. She remained in this condition for several days, without any movement of the bowels, and intestinal obstruction was suspected. Castor-oil finally produced a dejection which was followed by a lowering of the pulse and temperature.

For nearly a fortnight she was not seen by a physician, and she was then admitted to St. Monica's Home, where she remained two weeks. During her stay she was dull and stupid, suffered from moderate epigastric pain and sensitiveness, nausea and vomiting, and inability to eat solid food. The skin was not hot to the touch. Pulse, 80. Her bowels were kept open by laxatives or enemata. There was a trace of albumin in the urine. The abdomen was full and rounded, and nothing abnormal was discovered on palpation. During the latter part of her stay she was able to sit up, daily, for a short time. She left the Home without the knowledge of the physician, walked some distance, and was supposed to have drunk to excess.

Three days later she was seen by Dr. Sears, who found her suffering from severe pain in the right hypochondrium and epigastrium, with marked prostration. Her thirst was intense, but she immediately vomited everything swallowed. There was constant expectoration of thick, frothy mucus. Pulse, 120; temperature, 99.4° F. The abdomen was distended, the walls rigid. There was especial prominence of the epigastrium and right hypochondrium. This condition persisted during the three following days, at the end of which she was taken to the Massachusetts General Hospital, where she died in the course of a few hours, at the end of the seventh week of her illness.

Dr. Whitney, who made the post-mortem examination, found the pancreas of normal size and density, in general of an opaque-gray color.

At the lower part of the head was a trabeculated cavity with dirty-green, shreddy walls, and containing cheesy, necrotic material. A large branch of the duct, with a ragged edge, opened directly into this cavity. Its wall, near the cavity, was green and soft. The main duct was intact, but contained, near its outlet, a small quantity of dirty-brown, viscid fluid. The parapancreatic fat-tissue formed a part of the wall of the cavity above mentioned; near the splenic end of the pancreas was a hole in the fat-tissue, as large as a walnut and containing a dirty-green fluid. Elsewhere in the neighboring fat-tissue, and in that of the mesentery, meso-colon, and posterior abdominal wall, were numerous opaque-white, pap-like nodules from the size of a pin-head to that of a pea. They were, at times, aggregated in clumps; the contents could be squeezed out. The smallest nodules were frequently surmounted by an injected border.

There was nothing abnormal in the portal vein or its immediate radicles. The liver was in a condition of brown atrophy, and there were minute, pale-yellow calculi in the gall-bladder and common duct. There was no evidence of a general peritonitis, but on cutting through the meso-colon the stomach and colon were found slightly adherent. The microscopic examination of the fat-tissue showed characteristic necrotic patches with a margin of round-celled infiltration. Also occasional small abscesses and more diffused infiltrations of leucocytes.

In addition, occasional circumscribed, round spots were seen, composed of more or less elongated and fat-cells, enclosed within a fibrous border. The cells varied in size, some being considerably larger than fat-cells and containing several nuclei, while the smallest had a diameter four times that of a red blood-corpuscle. These patches suggested a lymph-vessel plugged with desquamated and œdematous endothelium.

Dr. H. Jackson, under the supervision of Dr. Ernst, made a bacteriological analysis of the necrotic fat-tissue from the above case. From Dr. Ernst's report it appears that four varieties of bacteria were isolated:

1. A liquefying, fluorescent organism, which proved to be a fine, short rod, half the size of the bacillus of tuberculosis.

2. An organism closely resembling the staphylococcus pyogenes citreus, both in the manner of its growth and in its microscopical appearances.

3. Very short, rather thin, non-liquefying rods, which formed thin, grayish, almost translucent, and much-wrinkled pellicles on the surface of the gelatine and agar-agar, around the mouth of the needle-track.

4. The only organism found in large numbers. The cultures grew as finely beaded colonies along the needle-track, with a flat, pearl-gray top extending two or three millimetres over the surface of the nutrient material. Microscopic examination showed the organism to be composed of very short, thick rods, resembling somewhat the appearances found in one or two of the sections of the necrotic tissue. It did not liquefy the gelatine.

Twenty-two Cases of Suppurative Pancreatitis.

No.	Authority.	Sex.	Age.	Antecedents	Symptoms.	Lesions.
XXXIV....	Baillie: Morbid Anat., 1833, 221, 223.	M.	20	.....	General abdominal pain, nausea, sense of distention and weight in stomach after eating. Tendency to purge. Dropsy.	Pancreas a good deal enlarged and contained a considerable quantity of pus.
XXXV.....	Perle. De pancreate ejusque morbis, Diss. Inaug. Berl., 1837, 33.	M.	Adult.	Feeble, scrofulous, phlegmatic.	Dull epigastric pain for several weeks, then becoming violent, with nausea; offensive, loose stools; quick pulse, dry skin, sensitive epigastrium. Temporary improvement. Return of diarrhœa, fever, emaciation, weakness. Death at end of more than four months.	Pancreas in part hardened, in part full of pus. The pus had escaped into the abdomen. Other organs normal.
XXXVI....	Fletcher: Prov. Med. and Surg. Jour., Lond., 1848, 20.	....	Adult.	Corpulent, apparently much addicted to food and drink.	Great epigastric pain, distention after meals, continued dull pain, extending into both hypochondria above navel, relieved by purgatives, vomiting, constipation. Progressive emaciation and debility. Stools finally fetid, bloody. Temporary improvement, hectic, and death after nine months of illness, and four months in house. Intestinal obstruction suspected.	Enlarged pancreas formed a purulent mass without healthy structure. Its[t] extremity had ulcerated into the duodenum at lower curvature, through which pus must have passed into the intestine. Liver enlarged, spleen normal.
XXXVII...	Kilgour: Lond. Journal of Medicine, 1850, ii. 1052.	M.	41	Indolent, large eater, fond of sweets. For some years attacks of bilious dyspepsia. Last attack seven months ago, did not recover as usual.	Emaciated, feeble, dispirited, restless; frequent vomiting, eventually of thin ropy mucus. Sensation of distended stomach and bowels, in which much gas. No appetite, no thirst, sluggish bowels, consistent stools, unmixed with bile and very fetid. No pain nor sensitiveness, nor tumor. Left abdomen dull, tympany in right abdomen and over stomach. After two months of slight downward tendency, frequent chills and fever. Region between navel, lower border of stomach, and left flank dull, doughy, inelastic, not sensitive. After two weeks chills ceased and a resistant sore spot appeared above navel and at the left. Œdema of feet and legs. Death after eleven months.	Pancreas much enlarged, envelopes thickened. Entire gland formed a trabeculated cavity filled with creamy pus and a few cheesy masses about the size of a bean. The duodenum contiguous to the pancreas broke into pultaceous shreds, even on cautious handling. Spleen enlarged one-third. Despite extreme emaciation a half inch of fat in the abdominal wall.
XXXVIII..	Riboli (Gazz. Sard., 1858): Schmidt's Jahrb., 1859, cii. 177.	F.	54	Robust. Some months ago an attack of disturbed digestion with loss of appetite, flesh, and strength; chilliness, morning belching: thin, viscid, liquid vomited. Recovery.	Recurrence of antecedent symptoms, with deep-seated, dull pain, pyrosis, slight jaundice, swollen epigastrium. Alternate diarrhœa and constipation; stools white, slimy, not offensive. Gradual loss of flesh and strength. Death.	Pancreas wholly suppurating. Spleen natural. Gall-bladder full of bile.
XXXIX..	Klob; Œster. Zeitschr. f. pr. Heilkde., 1860, vi. 529.	F.	64	....	.....	Upper part of pancreas a dense gray callus, in which a few remains of gland substance and round cavities, up to the size of peas, filled with thick, white fluid; also, several small pus cavities. In the lower part of the pancreas an abscess as large as a walnut. The duct narrowed at the mouth, gradually widened toward the tail. Posterior wall of the stomach firmly adhered to pancreas, and contained a submucous abscess.
XL.....	Drasche: Ber. d. k. k. Krauhenanst. Rud-Stift in Wien, 1868, 301.	M.	23	Well.	Severe gastric pain without cause, loss of appetite, sluggish stools, slight fever, sensitive epigastrium, rapid emaciation. In the course of a fortnight violent paroxysms of stabbing pain, spreading laterally from the epigastrium, which was swollen, tense, and tympanitic. Paroxysms attended with transient collapse. In the fourth week a feculent diarrhœa, which suddenly became thin, profuse, watery, with nausea and bilious vomit. After decided improvement, fever and diarrhœa returned in the seventh week, and the abdomen became much distended. The tympany increased, there was occasional hiccough, progressive weakness, extreme emaciation, and death on the sixty-fifth day.	Pancreas large, firm, yellowish-red. Sclerosis of peripancreatic tissue. On section several abscesses, some larger than a bean, at times communicating by sinuous tracts, two of which open into the adherent posterior wall of the stomach, and two into the duodenum. Spleen of normal size, firm, pale red. Splenic vein obstructed by a reddish-yellow thrombus, in front of which the vein-wall was shreddy and its cavity communicated with a large abscess. A lumbricus lay half in the vein and half in the abscess, and in a sinuous passage leading from it to the duodenum. An abscess as large as a hen's egg in the left lobe of the liver. Fibrinous peritonitis, especially in upper abdomen.
XLI.....	Roddick: Canada Med. Jour., 1869, v. 385.	M.	30	Intemperate. Much exposed when drunk, and then has diarrhœa. Has had two attacks of intermittent fever. Chronic cough for two years. Under treatment for syphilis.	After two days of constipation slight epigastric pain and vomiting, thirst, hot skin, no appetite. The bowels were moved freely. A chill occurred, followed by fever, chills, and diarrhœa toward the end of the week, then slight jaundice, persistent chills, and diarrhœa, and death in a collapse on the twelfth day.	Pancreas firmly adherent. On section of the enlarged head an abscess opened, the walls thick; contents, an ounce of pus. The dilated duct in the head held several calculi. Spleen weighed 11¾ ounces. Lungs phthisical, and containing a central chocolate-colored nodule from which pus escaped.
XLII.....	Nathan: Med. T. and Gaz., 1870, ii. 238.	M.	25	Catarrhal symptoms and great debility for two weeks.	For two days gastric irritability, nausea, constipation; then incessant hiccough. Epigastrium distended, tympanitic, no pain, no tenderness, constant copious vomiting of thin, brownish, stringy fluid; no jaundice; increasing loss of flesh and strength. Death from exhaustion in six days from the onset of the symptoms of gastric disturbance. Diagnosis, ileus.	Pancreas large, head indurated, mortar-like. Duodenum closed by pancreatic pressure, coats thickened. Small omental hemorrhages. Distended gall-bladder.
XLIII.....	Smith: Dublin Jour. Med. Sci., 1870, 201.	M.	...	....	.....	Pancreas closely connected with neighboring organs. Splenic end contained a small abscess, with thick greenish-yellow pus. Several small lymphatic glands near duodenal end contained similar pus. Abscess in the diaphragm above the spleen.
XLIV.....	Frison: Marseille Méd., 1875, xii. 257.	M.	30	.....	Continued fever, severe abdominal pain at level of spleen, which was supposed to contain an abscess. Death in a month.	Abscess of pancreas surrounded with adhesions.
XLV.....	Frison: Loc. cit.	M.	28	Delicate; suffered from hard work and extra hours.	Loss of appetite, epigastric pain, jaundice, no fever. In third month pain in right hypochondrium and shoulder; swollen abdomen, testicles, and feet. Sudden increase of appetite and thirst, abundant saccharine urine. In the tenth month intense jaundice, extreme emaciation, great weakness, lower abdomen dull, upper abdomen distended and tympanitic. Diabetes persisted, return of fever. Death in coma at end of ten and a half months.	Pancreas enlarged threefold, indurated, infiltrated with pus. A large collection of thick, yellow pus in the tail. Numerous small abscesses in the left lobe of the liver. Enormous dilatation of the common bile-duct. Spleen not enlarged.
XLVI.....	Friedreich: Ziemssen's Handb. d. Sp. Path. u. Ther., 1875, vii. 2, 243.	M.	40	.....	An attack of severe abdominal pain, without cause, followed by tense tympanitic abdomen, which was sensitive. Frequent regurgitation and bilious vomit, constipation, high fever. Death in the course of a week.	Pancreas enlarged threefold, reddened, consistency increased, studded with hundreds of abscesses up to the size of beans, many projecting had burst into abdomen. General fibrino-purulent peritonitis, especially in the upper abdomen.

Twenty-two Cases of Suppurative Pancreatitis—Continued.

No.	Authority.	Sex.	Age.	Antecedents.	Symptoms.	Lesions.
XLVII.....	St. George's Hosp. Rep., 1877-78, 1879, ix. 95.	M.	....	Strong; temperate. Dislike for fatty food. Sick-headaches, left inguinal hernia.	After a month of cough and dyspnœa, six months ago, came diarrhœa, wasting, loss of appetite, and jaundice. After seven weeks a month of considerable œdema. For ten days epigastric and interscapular pain. Death from exhaustion after five months of abdominal symptoms.	Head of pancreas enlarged. A diffused abscess followed the course of the ducts and opened into the lesser omental cavity which was full of pus, and communicated with the duodenum. Fibrino-serous peritonitis. Thrombosis femoral vein. Cheesy apices, cirrhotic distended bile-ducts.
XLVIII....	Shea: Lancet, 1881, ii. 791.	F.	29	Fifteen months ago pain in region of liver, increasing and shooting; no nausea, poor appetite, bowels regular, fæces dark.	Jaundice for two weeks, tenderness over gall-bladder, cough, disturbed sleep. After two weeks apparent convalescence for four days, then return of pain over gall-bladder; nausea, bilious vomit, jaundice; restless; rapid breathing, unconscious. Death in thirty-six hours.	The enlarged and hard pancreas contained an abscess. A round worm, seven inches long, lay partly in the duodenum, partly in duct; large fatty heart, pale kidneys. Large, pale, soft liver.
XLIX.....	Fraenkel: Ztschr. f. klin. Med., 1882, iv. 277.	M.	58	A year ago loud belching; abdominal fulness, no sensitiveness. Nine months ago pale, sensitive epigastrium; black, tarry stools. Recovered from these symptoms, but was pale and emaciated. After five months another attack of intense gastric disturbance lasting a fortnight. Then improvement and gain in weight.	After an error in diet, vomiting and severe abdominal pain. Swollen, sensitive abdomen. Pains in both hypochondria. After four days increasing meteorism, fever, return of vomit, sleeplessness, progressive weakness, collapse, and death on the eleventh day.	Pancreas, swollen, anterior surface dotted with numerous yellowish-white prominences, up to the size of hemp-seed, alone and in groups, forming cavities with smooth walls and pap-like contents. A group of these, gray, gangrenous, covered with shreddy peritoneum. The contents of these cavities were partly, granular corpuscles and detritus. The smallest had a wall of small-celled infiltration, similar faces on section, also narrow and broad bands and diffused growth of fat-tissue. Similar prominences in the transverse mesocolon and mesentery, in the former a circumscribed necrosis with floating shreds, and fresh peritoneal adhesions. Abundant subperitoneal fat.
L.....	Moore: Trans. Lond. Path. Soc., 1882, xxxiii. 186.	M.	25	.....	Obscure symptoms of peritonitis.	Pancreas extensively destroyed by suppuration. The remaining splenic end infiltrated with pus, showed a ragged surface, forming part of the wall of an abscess, bounded below by the lowest four inches of the ileum, and above by the stomach, spleen, abdominal wall, and coils of intestine.
LI.....	Moore: Loc. cit.	M.	74	.....	....	Head of the pancreas partly broken down, found one wall of an abscess elsewhere, bounded by peritoneal adhesions.
LII.... ...	Moore: Loc. cit.	M.	35	....	Slight jaundice.	A large part of the head of the pancreas destroyed by an abscess bounded by pancreas, duodenum, and under-surface of stomach. The dilated common duct communicated with the abscess, and the latter opened into the peritoneal cavity and invaded the pancreatic and duodenal artery.
LIII.....	Musser: Am. Jour. Med. Sci., 1886, N.S., xci. 449.	M.	42	Intemperate; exposed to hardship.	For some weeks increasing debility. One attack of vomiting, marked ascites. For the next twenty-five days dull, listless, without appetite; fever, pain. Ill-defined epigastric tumor, not sensitive. Abdomen tapped, refilled in eighteen hours.	In the head of the pancreas an abscess as large as an orange. The rest of the gland dense, containing numerous pus pockets. Ducts dilated. The large abscess opened into a pus cavity, bounded by posterior wall of stomach, pancreas, duodenum, transverse colon, and peritoneum. Portal vein filled with a puriform thrombus extending into hepatic, splenic, and mesenteric veins. Slight cirrhosis; small, soft spleen. Recent peritonitis; bronzed skin.
LIV...	Bamberger: Wiener Clin. Woch., 1888, xxxiii.; Allg. Med. Centr. Zeit., 1888, lvii., 1870, 1886.	M.	20	....	Ate a probably putrid sausage. Sudden nausea, violent vomiting, prostration, alternating heat and cold, severe headache. The next day chill, cutting pains in abdomen, diarrhœa. On the fifth day high fever, meteorism, dilated gastric and ileo-cæcal regions. A week later jaundice. After five days the liver became enlarged, painful, and sensitive; the abdomen eventually distended and tense; the stools thin and pap-like; urine frequently contained peptones, one or two daily chills with atypical and abrupt changes of temperature. Eventually repeated watery vomit; hiccough. Death in collapse at the end of the sixth week.	Head of the pancreas contained an abscess as large as a hen's egg, filled with greenish-yellow pus. The greatly enlarged liver agglutinated to the diaphragm, anterior abdominal wall, and stomach; numerous abscesses present, the largest the size of a hen's egg, also dark violet nodules. Vena portæ almost obstructed by a brownish-red thrombus, continued into the splenic vein. Behind the pancreatic abscess the portal vein wholly obstructed, the thrombus reddish-gray, in a state of puriform softening. Spleen 6 by 3½ inches, pulp not readily scraped away; dense, brownish-red. Recent fibrino-serous peritonitis.
LV.....	Mass. Genl. Hospital Records and MS. Notes, 1888, v. 131.	F.	39	Intemperate. Has suffered for a year or two from poor appetite, distress after eating, pain in stomach; constipation.	Sudden epigastric pain, vomiting, constipation. In the course of a few days after an error in diet the pain became intense, accompanied with fever. There was constant hiccough and vomiting. The abdomen became swollen, and the epigastrium sensitive. The constipation persisted, and intestinal obstruction was suspected. Six days before death, after indulging in alcohol, his symptoms became aggravated, and death occurred on the forty-eighth day.	The head of the pancreas contained a trabeculated cavity with green, shreddy walls, which communicated with the parapancreatic fat-tissue, a branch of the duct with green and friable walls opened into the cavity. In the fat tissue at the splenic end of the pancreas was a cavity containing a dirty green fluid. Multiple nodules of fat necrosis are present, also peritoneal adhesions between stomach and transverse colon in the omental bursa. No general peritonitis. Nothing abnormal in the portal vein or its branches.

Of twenty-one patients, seventeen were males and four were females; all were adults, whenever ages were mentioned, and in eighteen cases the age was given as follows:

Years of age.	Number of cases.
From 20–25	3
" 25–30	4
" 30–35	2
" 35–40	2
" 40–45	3
" 45–50	0
" 50–55	1
" 55–60	1
" 60–65	1
" 65–74	1

Previous attacks of indigestion, of greater or less frequency and severity, were present in about one-fourth of the cases. These attacks were usually regarded as gastric or bilious. One patient suffered from sick headache, while another was subject to diarrhœa during his drinking-bouts. Three were distinctly intemperate, two might be regarded as gluttonous, and one was exposed to hard work and extra hours.

The immediate attack was precipitated in two instances by errors in diet, in the one case a probably putrid sausage having been eaten. The attack was greatly aggravated in a third case by a dinner of roast goose and cabbage. Two weeks of catarrhal symptoms with great debility were the antecedents of another case.

A striking feature in the history of these cases of suppurative pancreatitis is the tendency of this affection to become chronic. Of fourteen cases six were fatal in the first month, three during the second month, and five at

various periods between four and eleven months. Death might take place at the end of the first week, and even the more chronic cases often began with distinctly acute symptoms.

It is therefore desirable, in the consideration of this series of cases, to group them with particular reference to the rapidity of their course.

The cases of acute suppurative pancreatitis usually began suddenly, with severe, generally intense, gastric, epigastric, or abdominal pain, vomiting, and sometimes great prostration. The vomiting might be incessant and distressing, or it might give temporary relief to the pain. The ejected fluid was sometimes stringy and brown. The bowels were usually constipated, although diarrhœa might occur within the first twenty-four hours. This latter symptom was not infrequent at a later date of the disease.

Fever, usually slight, was the next conspicuous symptom, being manifested about the third day. At the same time the upper abdomen, especially the epigastrium, was likely to become distended, tympanitic, and sensitive. Hiccough, sometimes quite obstinate, was not infrequent at this stage, and occasional chills were to be met with. The abdomen, in general, then became moderately swollen, tense, and tympanitic.

With the violent onset and persistence of these symptoms death might occur, perhaps, in the course of a week or more.[69] The pancreas then was markedly enlarged, reddened, and studded with hundreds of small abscesses, many of which had burst into the peritoneum. The associated fibrino-purulent peritonitis was most marked in the upper abdomen. In the second case,[70] where death resulted in eleven days, the attack was apparently recurrent in a corpulent person who had suffered for a year from symptoms which might be attributed to pancreatic disease. There were found in the pancreas numerous small, yellowish-white prominences, alone and in groups, with soft, pap-like contents. They were present on section as well as superficially. The contents were fatty-degenerated cells and detritus. The wall of the smallest cavities was infiltrated with round cells, while that of the others was smooth. A group of these prominences were grayish, discolored, gangrenous, the superficial peritoneum being perforated and shreddy. Similar nodules were found in the mesentery and in the transverse meso-colon. In the latter was a circumscribed necrosis with floating shreds and fresh, peritonitic adhesions. The pancreas was irregularly traversed by narrow and broad bands and by a diffused development of fat-tissue. Not only does the clinical history of this case suggest a recurrent and finally fatal attack, but the pancreatic lesions also point to a long-standing process. Fibrous bands, fatty-degenerated cells and smooth-walled cavities filled with detritus favor this view. The description of these nodules suggests that many of them were probably foci of fat-necrosis, with gangrenous sloughing of the subjacent peritoneum.

An acute, suppurative pancreatitis, however, very rarely terminates at this early date. The symptoms already described may persist for three or four weeks, with progressive emaciation and debility, and death occur from exhaustion. Under such circumstances the simple abscess has been found surrounded with adhesions.

In another series of cases, beginning equally violently, there may be frequent chills and irregular, atypical, often high, fever, the maximum temperature being 105.8°. Slight jaundice may be associated. The pains extend into the hypochondria, and may spread from this point downward.

The liver, perhaps the spleen, may be palpably enlarged—the symptoms are conspicuously those of blood-poisoning, and the patient dies collapsed in the sixth or seventh week. An abscess as large as a hen's egg, filled with greenish-yellow pus, may then be found in the pancreas. Also a pylephlebitis, apparently the result of the pancreatic abscess and associated with multiple abscesses in the liver, and acute peritonitis.[71] Death at the end of seven weeks may result from the extension of the pancreatic abscess to the parapancreatic fat-tissue, with the production of multiple nodules of fat-necrosis.[72] In this case the symptoms of epigastric pain, vomiting, constipation, and swelling were interrupted by a period of several weeks of comparative comfort, to be followed by marked prostration, incessant vomiting, severe epigastric pain and fever.

Another event in the history of acute, suppurative pancreatitis is to be found in the course of the third or fourth week of the tense and swollen, painful and sensitive, upper abdomen which follows the pain, vomiting, constipation, and fever. A diarrhœa then becomes conspicuous, perhaps preceded by violent paroxysms of lancinating pain shooting laterally in the epigastrium, producing temporary collapse.

The loose stools may be thin, yellow, and feculent at the outset and then become profuse and watery. This symptom may then subside, with a lowering of the fever and a general improvement, to recur after a few weeks with fever and abdominal distention, progressive emaciation and increasing weakness, ending in death in the tenth week.

Several small abscesses have then been found in the enlarged and firm pancreas, with sclerosed peripancreatic tissue. Communicating sinuses unite these abscesses and open into the adherent stomach and duodenum. A splenic thrombo-phlebitis and a hepatic abscess may be associated, also a fibrinous peritonitis, especially marked in the upper abdomen.[73]

The early symptoms may be less severe and the disease be announced by progressing weakness and emaciation. Loss of appetite, slight jaundice, perhaps diarrhœa, may occur. There may be neither fever nor pain, or there may be obscure symptoms of peritonitis. Finally, anasarca or ascites becomes apparent, and death occurs from exhaustion, perhaps at the end of five months. The pancreas may then contain a diffused abscess, following the course of the ducts and opening into the cavity of the lesser omentum, which was filled with pus, and in its turn emptying into the duodenum through a sinus in the mesentery, these conditions being associated with a fibrino-serous peritonitis. The pancreatic abscess may extend, at an earlier date even, to the omental cavity, thus forming a great pus-cavity extending as low as the lowermost coils of the ileum, and walled in by adherent intestines and stomach. The greater part of the pancreas may be destroyed. The common duct may open abruptly into the abscess of the pancreas, and leave it at the hepatic end. There may be an associated thrombosis of the portal vein continued into its primary sources, and the pancreatico-duodenal artery may be eroded, with hemorrhage into the cavity of the abscess. A recent peritonitis may be associated, and in one of these somewhat protracted cases, with extension to the omental cavity, a bronzed skin was present.

Finally, there are the most chronic cases, which extended over a period of nearly a year. As a rule no severe pain occurs at the onset, but the patient gradually becomes weak and thin; vomiting may be frequent, and a sense of distention of the stomach after meals or of epigastric pain be complained of. There may be little or no fever, or periods when chills and fever occur. The stools may be consistent, not colored with bile, and very fetid, or later they may be very offensive and mixed with blood. There may be a free communication between the pancreatic abscess and the duodenum, or the latter may break into pultaceous shreds when handled. The entire pancreas may be converted into a trabeculated cavity filled with creamy pus and cheesy masses, or it may be indurated and infiltrated with pus. In one of these protracted cases[74] diabetes appeared after the third month.

[69] Case XLVI. [70] Case XLIX. [71] Case LIV. [72] Case LV. [73] Case XL. [74] Case XLV.

Noteworthy in these cases of suppurative pancreatitis is the rarity with which a circumscribed tumor is to be found. A swollen, tympanitic epigastrium is the rule, and very rarely a circumscribed resistant spot was to be felt above the navel, to the left of the median line.

Jaundice occurred in less than one-fourth of the cases. It was then usually slight. Its intensity in one case was connected with abscesses in the liver and dilated bile-ducts.

Another fact of considerable importance is the, usually, small size of the spleen. The rule was that no enlargement was noticeable even in those cases in which the thrombotic obstruction of the splenic or portal vein was recorded. The small spleen was usually of normal density.

From the above consideration it is evident that there are cases, few in number, of acute suppurative pancreatitis which run a course similar to that described in connection with hemorrhagic inflammation. They may begin with equal suddenness, present the same grouping of symptoms, but are not so early fatal. They are more rarely associated with evidences of fat-necrosis, which were present in but two instances.

Although Klebs[75] regarded pancreatic abscesses, not arising from a peripancreatitis or from suppurating cysts, as of doubtful existence, it is apparent that this view is opposed by the evidence here recorded. It is also evident that the extension of an abscess from the neighboring lymph-glands to the pancreas is of extreme rarity. The only evidence in favor of this view is that offered by Portal[76] and in the case[77] reported by Smith. The possibility that a pancreatic abscess may be due to inflammation of the appendix is evident from Moore's case, although the connection between the two may have been through a mesenteric thrombo-phlebitis, arterial embolism, or through the coexistence of acute pancreatitis and appendicular inflammation.

The possibility that a pancreatic inflammation may be excited by the passage of a lumbricus into the pancreatic duct is admitted in connection with the appearances in Case XLVIII. It is still more probable, however, that the worm entered the pancreas after the establishment of the inflammation. Its presence there might be merely accidental, even taking place after death, as is likely to have been the fact in Case XL.

CARBONIC-ACID WATER AS A VEHICLE FOR CREASOTE.—The taste and odor of creasote are so disagreeable to many patients that physicians have in some instances been deterred from prescribing it, especially in the large doses in which it has been advised by German writers. It is true, when given in capsules the taste and odor are not perceived; but this form of administration is objectionable when large doses are given, because the drug then reaches the stomach in a concentrated form. Dr. J. Rosenthal advises the use of carbonic-acid water containing cognac as a vehicle for the creasote. This combination, he says, is comparatively tasteless, and obviates the disadvantages attending the administration of creasote in a concentrated form. The mixture is put up in bottles holding five and a half, ten and a half, and sixteen ounces. The smallest bottles contain from one and a half to three minims of creasote and seventy-five minims of cognac; the middle-sized bottles, six minims of creasote and two and a half fluid drachms of cognac; while the largest contain nine minims of creasote and three and a half fluid drachms of cognac. During the first week the patient is directed to take one of the smallest bottles after dinner and supper each day; during the second week he should take a half-bottle of the next stronger water after breakfast and dinner, but continue to take the weaker water after supper. The quantity of creasote which he takes may in this way be increased gradually until the maximum dose of twelve and a half minims a day is reached. —*The Medical and Surgical Reporter.*

[75] P. 21. [76] P. 17. [77] No. XLIII.

Original Articles.

A CLINICAL STUDY ON ALOPECIA AREATA, AND ITS TREATMENT.[1]

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ALTHOUGH not a dangerous affection, and one ordinarily thought of mainly in connection with cosmetic effect, alopecia areata may, and often does, cause an amount of annoyance and distress which is as hard to be borne as actual pain. While in some instances it may be but a transient affair, and may consist of but one or more small, perfectly bald spots, which are readily concealed by hair of ordinary length, in other instances it may prove most intractable, lasting years, involving large and conspicuous areas, and even removing every hair from the body, including eyebrows and lashes; in its fullest development it causes a very considerable disfigurement, and even in moderately severe cases the baldness is so striking that it becomes a veritable cross to the sufferer, from the attention it attracts and from the uncertainty as to the nature and cause of the affection.

It may be well, therefore, for us to give a little consideration to this complaint as it appears clinically among us, and to indicate the treatment most successful in remedying the disease.

I shall not attempt at all to enter into a discussion of the nature or causation of alopecia areata, which has been so ably presented by Robinson[2] in his article before the Ninth International Congress in 1887. The subject is a great one, about which much has been written in advocacy of its neurotic origin on the one hand, and of its parasitic nature on the other. A further discussion of the matter here would be fruitless, and foreign to the purpose of the paper, which is simply to present personal clinical experience in the disease, with an analysis of the cases which have been under my observation and care.

Alopecia areata is presented for treatment much less frequently than I had supposed, previous to making my inquiries into the statistics of cases of skin disease which had been under my care. In my first analysis of one thousand cases of skin disease,[3] I find but four instances of alopecia, and of these only one was recorded as alopecia areata, one of alopecia partialis, and the other two had no special designation. In my next series of cases analyzed[4] not a single instance of the complaint was recorded among 617 cases of skin disease; and in my third analysis[5] only one patient with alopecia areata was seen among 774 cases of skin disease. In a subsequent study and report on 8,000 cases of skin disease in private and public practice,[6] there were 46 cases of alopecia areata; of these, 32 occurred among 2,583 cases in private practice, 1.24 per cent., and but 14 cases were seen in public practice among 5,417 cases, or only 0.25 per cent. of all skin cases.

On examining carefully later records I now find data relative to 119 cases of alopecia areata, occurring among 12,725 cases of skin disease, seen in private practice, at the New York Hospital, and at the Skin and Cancer Hospital. I have excluded all of the earlier records of skin cases seen in other institutions, because the original data are not accessible at present.

The proportion of cases of alopecia areata to the whole number of patients is here seen to be 0.94, or not quite one per cent. But when we come to examine the records of cases seen in private practice as compared with

[1] Read before the New York State Medical Society, February 7, 1889.

[2] Robinson: Transactions of the Ninth International Congress, Washington, 1887, vol. iv., p. 241.

[3] Ame.ican Practitioner, May, 1875.

[4] Ibid., April and May, 1876.

[5] New York Medical Journal, April and June, 1877.

[6] Archives of Dermatology, vol. viii., No. 4, 1882.

those seen in public institutions, the difference will be found very striking. Thus, among these 119 cases, only 32 were observed in public practice among 7,086 cases, it forming there only 0.45 per cent., whereas in private practice there were 87 instances among 5,639 cases of general skin disease, or something over 1.54 per cent. The reason for the larger percentage of cases occurring among the public cases now analyzed than among those previously referred to, is found partly in the fact that in the hospitals last mentioned the grade of patients is higher than in many other public institutions, approaching more nearly to the class treated in private practice.

It will be seen that in these statistics the proportion of cases of alopecia areata was more than three times greater in private than in public practice, namely, 1.54 per cent. to 0.45 per cent. This difference in relative frequency cannot be wholly attributed to the greater attention which would be paid to the complaint among the former class of patients, for the appearances presented by the bald, smooth, white patches are so striking that they cannot escape attention, and my experience has been that the plainer classes are often quite as solicitous about the disease, when present, as are the rich. I believe alopecia areata to be relatively much less frequent among the poor than among the rich, which is, in a certain measure, an argument against its supposed parasitic origin, and in favor of its neurotic nature.

In the large statistics gathered by the members of the American Dermatological Association, almost entirely or very largely from public practice, the disease forms only about 0.64 per cent., corresponding more to that observed by me in public practice. It seems, however, to be somewhat more frequent in other countries, as McCall Anderson [1] gives nearly two per cent. among his cases, and Crocker [2] says that his statistics yield about the same.

Referring now to the 119 personal cases already mentioned, we will find many points of considerable interest in them, as the histories of almost all of them have been preserved. The following table presents the ages of the patients when applying for treatment:

TABLE I.—*Ages of One Hundred and Nineteen Patients with Alopecia Areata.*

Age.	Males.			Females.			Grand total.
	Private practice.	Public practice.	Total.	Private practice.	Public practice.	Total.	
5 years and under	..	1	1	1	..	1	2
5 to 10 years	1	..	1	4	3	7	8
10 to 15 years	6	..	6	5	1	6	12
15 to 20 years	3	1	4	3	4	7	11
20 to 25 years	7	7	14	4	1	5	19
25 to 30 years	12	5	17	1	1	2	19
30 to 35 years	10	2	12	3	2	5	17
35 to 40 years	12	1	13	4	1	5	18
40 to 45 years	2	2	4	2	..	2	6
45 to 50 years	1	..	1	..	..	..	1
50 to 55 years	3	..	3	1	..	1	4
55 to 60 years	..	..	..	..	..	..	..
60 to 65 years	1	..	1	..	..	..	1
Unknown	1	..	1	..	..	..	1
Total	59	19	78	28	13	41	119

It will be noted here that the number of the males is almost double that of the females, seventy-eight to forty-one.

The ages of the patients will be found to vary greatly, from early childhood to over sixty years of age, but the disease is found to be relatively rare in either extreme of life. The youngest patient was a little girl of four and a half years, now under treatment, who had had the disease since a few months of age. The oldest patient was a gentleman of sixty-one, who had been affected several times; the first time thirty-nine years previously, the second time twenty years previously, and the third attack began six months before his visit.

[1] McCall Anderson: A Treatise on Diseases of the Skin, p. 44. London, 1887.

[2] Crocker. Diseases of the Skin, p. 609. London, 1888.

Taking the years in decades, it will be found that there were comparatively few cases during the first ten years of life, but ten patients in all; this number is relatively small, considering the large number of individuals living at that age. It is a little curious also that of these ten cases, eight were in females, whereas in the total statistics the males were so largely in excess; in the next decade the females were again in excess, by three. I think that the reason for the larger proportion of females during these earlier periods of life can only be explained by the greater delicacy of their nervous organism at this time, taken in connection with the nervous theory of the disease in question.

The third decade, that between twenty and thirty years of age, presents by far the largest share of all the cases of alopecia areata, namely thirty-eight, or almost one-third of the entire number analyzed. And here is seen another striking fact in regard to sex, namely, that during this decade the proportion between the sexes is exactly reversed from that which was observed in the first decade of life; namely, that the males are in very great excess, instead of the females. Thus, we find here thirty-one males to but seven females; namely, more than four to one; exactly the reverse of that seen in the first decade, when there were four females to one male. If any supposition or deduction can be drawn from so small a number of cases, is it not that during this busy period in men's lives, when the cares of life begin to press, it is most likely that a nervous affection of this nature should develop?

In the fourth decade, that from thirty to forty years of age, we find still a large proportion of the cases, namely, thirty-five, more than in the first two decades together. Here the males are two and a half times the number of the females, namely, twenty-five to ten, the figures still supporting the nervous theory of the affection. In the later periods of life the disease is seen to be very much less frequent—indeed, it is rarely met with after fifty years of age. We find, then, that no less then seventy-three patients, or over sixty-one per cent. of the cases, occurred between the ages of twenty and forty. A negative argument against the alleged parasitic nature of the complaint is found in this fact, as it is well known that vegetable parasitic diseases belong largely to early youth, and are comparatively infrequent in adult life.

In the preceding table the ages of the patients were given at the time when they first presented themselves for treatment; this, however, does not exactly represent the age at which the disease appears, for in some of the patients it had existed for a considerable time before applying for relief. The following table, (II.) gives the alleged ages at which the disease developed in those patients in regard to whom a record is found of the fact, namely, in ninety-three cases.

TABLE II.—*Age at which Alopecia Areata Commenced in Ninety-seven Cases.*

Age.	Males.			Females.			Grand total.
	Private practice.	Public practice.	Total.	Private practice.	Public practice.	Total.	
5 years and under	2	1	3	2	..	2	5
5 to 10 years	3	..	3	4	4	8	11
10 to 15 years	8	..	8	5	1	6	14
15 to 20 years	4	2	6	2	2	4	10
20 to 25 years	8	2	10	4	0	4	14
25 to 30 years	13	1	14	1	..	1	15
30 to 35 years	4	2	6	3	1	4	10
35 to 40 years	7	..	7	5	..	5	12
40 to 45 years	0	1	1	1	..	1	2
45 to 50 years	1	..	1	..	..	..	1
50 to 55 years	3	..	3	..	..	..	3
Total	53	9	62	27	8	35	97

In looking at this table we see that the figures still corroborate the deductions drawn from the preceding table. Thus, of the ninety-seven cases in which the age of the patient at the commencement of the disease was recorded, in no less than twenty-nine patients, or thirty per cent., it began between the ages of twenty and thirty years, and of

these twenty-nine patients, twenty-four were males and five were females.

Table III. exhibits the duration of the disease before the patient came under treatment. It would be very interesting to give also a table of the entire duration of the disease, but, unfortunately, so many of the cases pass from notice, especially in public practice, before a perfect cure is obtained, and so many patients are seen in consultation, or but a single time, that it is very difficult to secure accurate statistics on this point. From this table, however, we learn that the affection is by no means a brief or transitory affair, but that the baldness, which may begin with a single insignificant spot, may increase and remain, often resisting all treatment even for many years.

TABLE III.—*Duration of Alopecia Areata in Ninety-three Patients.*

Duration.	Males.			Females.			Grand total.
	Private practice.	Public practice.	Total.	rivate practice.	Public practice.	Total.	
1 month and under ..	1	..	1	5	3	8	9
1 to 2 months	2	1	3	4	..	4	7
2 to 3 months	7	..	7	..	..	..	7
3 to 4 months	1	1	2	..	..	..	2
4 to 5 months	2	..	2	1	..	1	3
5 to 6 months	5	..	5	2	..	2	7
6 months to 1 year ...	8	1	9	3	2	5	14
1 to 2 years	5	1	6	2	..	2	8
2 to 3 years	3	1	4	2	1	3	7
3 to 4 years	3	2	5	4	..	4	9
4 to 5 years	3	..	3	3	..	3	6
5 to 10 years	6	..	6	..	..	..	6
10 to 15 years	1	1	2	..	..	..	2
15 to 20 years	2	..	2	..	..	..	2
20 to 25 years	2	..	2	..	..	..	2
25 to 30 years	1	..	1	..	..	..	1
30 to 35 years	..	..	..	..	..	..	..
35 to 40 years	1	..	1	..	..	..	1
Total	53	8	61	26	6	32	93

Of the cases here analyzed, namely, ninety-three, where the duration was recorded, thirty-five, or nearly half, had lasted six months before coming under treatment; in fourteen others the disease had existed between six months and a year; in eight it had lasted between one and two years; in seven between two and three years; and in nine between three and four years, and so on; while some cases are recorded as of twenty, twenty five, and even thirty years' duration.

Alopecia areata, however, will occasionally be seen to be quite self-limited, or rather to get well spontaneously without medical aid. In a number of instances among these cases there is record of former attacks, where the bald spots have become perfectly covered without treatment, in a varying space of time from a few weeks to some months; the disease has then again developed, perhaps, after an interval of months or years, persisting then, in spite of treatment, for some considerable time. In other patients, suffering from quite different skin affections, we also occasionally get the history of one or more attacks of alopecia areata which have recovered spontaneously, and not returned up to the date of observation. But in my experience this spontaneous recovery is relatively rare, and in the larger share of instances it is not permanent.

The longest period during which I have observed a case is in connection with that of a young gentleman now nearly thirty-nine years of age, whom I first saw something over twelve years ago. The disease had begun in him at two years of age, when the hair began to come out in spots, until within a year or two he had lost all the hair and eyebrows. He wore a wig until fifteen or sixteen years of age, there being almost no attempt at hair reproduction, when, after spending a little time at Richfield Springs, the hair reappeared over almost the entire scalp, and he began to grow beard and whiskers, which at nineteen years of age were full and natural. Affairs remained in this condition until he was twenty-six years of age, when alopecia areata appeared in the beard, and soon new spots developed, until, when seen nine months later, about one-fourth of the hairy surface of the face and scalp was bereft of hair. In spite of pretty diligent treatment the trouble remained, and increased until he became almost entirely bald on the scalp and face, including the eyebrows and lashes, and he lost the hair also from the body and limbs, including axillæ and pubes. From this relapse he has never recovered; for, although the hair regrows to a slight degree here and there, he is still obliged to wear a wig, and there is almost no reproduction of the hair on the face. He, however, after the first few months, has never been very diligent in treatment, and has always been burdened with a rather vexatious business, and has also had considerable depressing nervous influences in his family relations.

Among the cases here analyzed there occur thirteen cases—six males and seven females—in whom the disease was almost universal. Several of these recovered entirely; in one instance, a man acquired syphilis shortly after the hair had completely regrown from the alopecia areata, and within a few months the hair again fell, this time from the syphilis, in a very characteristic manner, quite different from that before presented, and again it regrew perfectly under anti-syphilitic treatment.

The limits of this paper do not permit of a further analysis of the cases, nor of the presentation of individual cases, many of which present points of very great interest, and I will pass to a brief consideration of the therapeutical aspect of the subject.

Successful treatment must ever depend upon a correct knowledge of the clinical history and nature of the disease, and a few words may be added in regard to this latter, without attempting, however, to enter the subject at all exhaustively.

From what has preceded it is readily seen that I believe in the nervous origin and nature of alopecia areata. I may say that I have examined a large number of the hairs taken from patients with this affection, as also scales scraped from the surface, and have always failed to detect any parasitic elements; and I may add that in no single instance has the disease been presented to me in a manner to show contagion, as occurs constantly in favus and ringworm, and no two of my cases occurred in the same family.

Time does not permit of the mention, or even of analysis, of the various researches on alopecia areata, and opinions concerning the disease. I may state, however, that Robinson, in the article referred to, shows pretty conclusively the untenability of the parasitic theory of the disease; but he also argues, though less forcibly, against its nervous origin. Robinson claims to have found the real cause of alopecia areata in micrococci, having "their seat specially in the lymph-vessels; that they give rise to inflammatory changes in the corium, and frequent coagulation of fibrine in the lymph- and blood-vessels." He believes that "the interference to the growth of the hair would seem to depend, partly at least, upon the thickened blood-vessel walls, and, in recent cases, also upon the presence of coagula in the arteries and lymph-vessels, interfering with the nutrition-supply. If an artery should be closed, the hair could fall out very suddenly in an area of considerable size, namely, the area supplied by that vessel; or a considerable extent of lymph-vessels could be clogged, and the same result could follow."

The theory is a plausible one, and if these observations as to the existence of micrococci deep in the corium are confirmed by others, it may possibly be found that they have some pathogenetic relations as to the ultimate causation of the disease. But, on the other hand, even if these foreign bodies were found to be present, it by no means follows that they are a primal cause of the disease in question. It is not claimed that they are acquired by infection from other cases, and the question arises as to whether they are not accidental, or a result rather than a cause of the disease under consideration. A theoretical argument has little worth in matters such as this, and at any rate we must wait further researches on the subject.

But even if these micrococci are an element of causation, the same arguments hold here as in other diseases, such as pneumonia, where they are detected, namely, that some condition of system or of the tissues is necessary in order that such microbes may find a footing and effect a development.

This brings us, therefore, to what I believe to be the true elements to be considered in alopecia areata, namely, the constitutional, and especially the neurotic, aspects of the cases. In proportion as I have regarded these in practice, so far have I had success in removing the alopecia areata, both at the time and permanently; whereas purely local treatment has never, in my hands, yielded thoroughly satisfactory results.

I need not dwell long upon the actual methods and details of treatment, for they are such as will readily suggest themselves when a correct knowledge of the true nature of the complaint is obtained and borne in mind.

Patients with alopecia areata should be put in the best possible condition hygienically; for, although they generally seem to be in good health, careful investigation will often show some departure from the normal condition which has more or less bearing on the disease. Thought must be especially directed toward nerve nourishment, and all my cases of late years which have done the best have been treated on this plan. The fats and phosphates should be increased in the dietary, and I always encourage largely the use of fresh butter, cream, fat of meats, etc. Milk is also of great service, if well borne; but, as I have fully explained elsewhere, this does not agree well with adults when taken in connection with other food. I direct it therefore to be taken absolutely alone, in the intervals between meals, say one hour before each meal, and at bedtime, provided this is three or four hours after the evening meal. The idea is, that as milk contains all the elements of nutrition, and is the substance from which the hair was originally grown, it will best aid in its later reproduction and nutrition.

The phosphates are best found in whole wheat, and I encourage the use of whole wheat bread, also crushed wheat with cream, and any other preparation in which the phosphates abound; fish I believe to be beneficial in these cases, and I urge its use once daily.

The medicinal treatment is based on the same principle, and my best results have been obtained under the free and continued administration of strychnia with phosphoric acid. Arsenic is of moderate value, and should be given in alternation with the former. Cod-liver oil is also valuable, especially in patients who cannot or will not take the fats in their dietary; and some of the emulsions, with a large proportion of phosphates, serve the double purpose above indicated.

Locally, the whole treatment is summed up in the single idea of stimulation of the diseased patches. While parasiticides are not actually called for by any local parasite present, experience has shown that many of the remedies used for this purpose are also of benefit in alopecia areata. Bichloride of mercury, in a strength to moderately excite the skin, is frequently the best application; but my preference is for veratria in ointment, of a strength of five to ten or more grains to the ounce. Croton-oil, strong carbolic applications, acetum cantharidis, capsicum, and other stimulating applications may also be used with advantage.

In conclusion, however, I am positive that the best results in the management of this often troublesome affection will be reached when it is looked upon, not as a local affair, but as a manifestation of a constitutional derangement, having its basis in lowered vitality of the nervous system.

4 East Thirty-seventh Street.

Malignant Scarlet Fever is said to be epidemic in parts of Dakota.

THE BABIES' HOSPITAL—A SUMMER'S WORK.[1]

By SARAH J. McNUTT, M.D.,
NEW YORK.

The Babies' Hospital of the city of New York obtained a temporary home and was opened at 161 East Thirty-sixth Street, June 16, 1888.

In August, 1886, Dr. J. Lewis Smith (Archives of Pædiatrics) in reviewing the causes of summer diarrhœa in infants, gave bottle-feeding the most prominent place in his summary. He stated that in the New York Infant Asylum when bottle-feeding was practised, the deaths kept pace with the admissions; while in the New York Foundling Asylum bottle-fed children were kept by themselves in a room known as the ward of the dying babies. He continued: "Many agents of proprietary foods have been allowed to make trial of their preparations in this ward, but no one has thus far published the result, for it has been thus far one of failure. In all the institutions in and about New York the result has been similar."

It may be added that Dr. Smith's statements but voice the opinions of the profession. Not long ago Dr. Winters made the remark that all wet-nurses' babies die, leaving the inference that bottle-feeding was the essential cause of this overwhelming mortality. The statistics of institutions which depend upon bottle-feeding have been such as to sustain these views; they have been uniformly bad. A recent report from the institution upon Randall's Island stated that but one bottle-fed baby, admitted to the hospital in the last eighteen months, had reached the age of one year.

In the face of such opinions and such results it may not, perhaps, be considered premature if we record a short experience in a hospital which received, not well babies, such as foundlings usually are, but babies which were already desperately sick at the time of admission; and which received them not into a country home, but into an ordinary house, wedged in between other houses in the heart of one of the most crowded parts of the city. Although that experience as yet covers only one summer, it seems to us to demonstrate that bottle-feeding is not necessarily fatal even in a hospital; and that a hospital for sick babies need not be a place for the production of autopsies alone.

From June 16, 1888, to January 1, 1889, admitted, 108: died, 32; discharged, 61; in ward, January 1, 15. Mortality, thirty per cent.

Of the 108 admitted, 51 were females and 57 were males; 79 were in age under one year, 53 were under six months, 34 were under three months, and 15 were under one month. Only 28 were over one year in age. Of the 32 who died, all were under one year; 16 were under six months; 12 were under three months; and 9 were under one month of age. Of the 108, 101 were admitted for gastro-intestinal disorders.

31	of these	were	complicated	with	subacute bronchitis.
5	"	"	"	"	acute "
2	"	"	"	"	chronic "
1	"	"	"	"	empyema.
2	"	"	"	"	pneumonia and pleurisy.
2	"	"	"	"	purulent conjunctivitis.
2	"	"	"	"	adenitis.
6	"	"	"	"	pustular eczema.
1	"	"	"	"	cleft palate.
6	"	"	"	"	rachitis.
1	"	"	"	"	fractured humerus.
10	"	"	"	"	ulceration and prolapse of rectum.
5	"	"	"	"	acute nephritis.
74					

This leaves only 27 uncomplicated gastro-intestinal disorders. Of the 7 cases admitted for other than gastro-intestinal disorders,

2	were	admitted	for	acute rheumatism.
2	"	"	"	hydrocephalus.
1	"	"	"	congenital heart disease.
1	"	"	"	congenital cataract.
1	"	"	"	congenital syphilis.

[1] Read before the Alumnæ Association, Blackwell Medical College, February 18, 1889.

Of the 32 who died, all were cases of gastro-intestinal disease.

3	were complicated	by	acute bronchitis.
2	"	"	" pulmonary tuberculosis
5	"	"	" acute parenchymatous nephritis
2	"	"	" " rheumatism.
1	"	"	" chronic bronchitis.
1	"	"	" congenital syphilis.
18	"	"	" inanition.

Autopsies were obtained in 18 cases. Twenty-two out of the 32 deaths took place during the hot months of July, August, and September. Some of these cases were received in a hopeless condition, but no child under two years was refused admission on account of the character of its illness, except where due to contagious disease.

In considering the details of the work, general hygienic management and selection of food precede in importance the use of drugs.

The hospital is kept scrupulously clean, and the wards are fumigated every two weeks with burning sulphur, averaging 2 pounds for each 1,000 cubic feet. The closet and bath-tub are, after thorough cleansing, daily disinfected with the zinc-salt solution recommended by the Board of Health:

Zinc sulphate	4 oz.
Salt	2 oz.
Water	1 gallon.

Once a week the waste-pipes are flushed with a hot lye solution, one-fourth pound to one gallon. The very ill children were disturbed as little as possible, were moved very carefully, and were kept perfectly clean and dry. All soiled articles were removed at once and placed in the zinc-salt solution. In the summer a number of hammocks were provided for the babies. These were suspended upon the back porch and protected from the sun and wind. There were carriages for those who could not be raised from the horizontal position.

Food.—Since most of the children were received suffering from digestive disorders, and all were dependent for recovery upon the condition of the stomach, most careful attention was given to that organ. The selection of food, the quantity, and intervals of feeding, were studied in each case. In cases received with gastro-intestinal catarrh, where the child was robust, it was first fed upon barley gruel of the consistency of skimmed milk. Where the child was constipated, oatmeal gruel was used. The gruel made from the Crown Wheat Food answered admirably in some cases. Where the child's vitality was low, to these was added the white of an egg beaten to a froth, one-half ounce to one ounce, with each feeding. In very much reduced cases Rudisch's sarcopeptones were useful, one-half drachm to one drachm in two to three ounces of the diluent. Beef peptonoids have been used in the same proportions. Wine-whey, one-half ounce to one ounce in one to four ounces of the gruel; also cream, one-half drachm to one drachm to each feeding, have been used as indicated in the case. Milk has been avoided until the fermentative changes have been overcome. As soon as possible, however, milk has been substituted for these foods, beginning with the proportion of one-sixth. At the end of two to six days, if no curds appeared in the stools and the child was gaining weight, the proportion was increased to one-fifth, and at the end of another week or ten days, to one-fourth, ascending according to the age and digestive ability of the child, always continuing a certain amount of dilution until the child was eight or ten months old.

Sterilized Milk.—Early in the fall, through the kindness of a gentleman who visited the hospital and became interested in the children, milk was obtained directly from a private farm in Westchester County four hours after milking. This has, during the later months, helped greatly to simplify the question of artificial feeding. The milk is obtained in the morning. It is then immediately sterilized in an amount sufficient for the next twenty-four hours, the Soxhlet process being used. When the baby has been removed from the hospital, and the mother has been unable to buy this apparatus, she has been directed to boil the milk in a preserve-jar for an hour, and then to close the jar carefully as though sealing fruit. This has been found a very fair substitute for tenement-house use. In the hospital, however, the details have been attended to with the most scrupulous care. All gruels and other prepared foods also have been kept in small air-tight bottles, and a bottle once opened has not been returned to the ice-box or used for another feeding. As soon as the child has finished nursing, its bottle has been immediately emptied, rinsed, and filled with a solution of the bicarbonate of soda and the nipple washed and placed in cool water.

The Soxhlet apparatus, as sold in this city is, unfortunately, supplied with red rubber stoppers, the color being due to the sulphuret of mercury, which is dissolved by the fat of the milk. Even in poor milk the amount dissolved is considerable, while in milk to which cream has been added it gives a perceptible pink color. Quite early this fact was recognized, and after ineffectual efforts to obtain pure rubber stoppers, cotton-wool was substituted while boiling, inserted as a plug. After removal from the fire, ordinary cork stoppers were inserted, the bottles were inverted so as to stand upon the corks, and when cool enough placed upon the ice. As the milk is kept only for twenty-four hours, this method has been found completely satisfactory.

Where diluted milk was not well borne, the previously sterilized milk was partially or completely pancreatized. The stools have been in all cases carefully watched for curds, the reaction noted, and the stools tested with ether for undigested cream. If curds persisted, the milk was withheld for a time, and the barley gruel or other diluent was given alone, or in combination with the white of egg, wine-whey, or peptones. This treatment was continued for twenty-four to forty-eight hours, and in some cases for from ten days to two weeks.

In one case, that of a baby of nine months, with catarrhal pneumonia and gastro-entero-colitis, only sarcopeptones could be digested for three weeks. In other cases cream would be usually added to each feeding with advantage, one-half to one drachm in amount. Where the requisite quantity of food given every two or three hours could not be retained, one-half drachm to two drachms were given every ten to twenty minutes, or one-half ounce every half-hour. To each child was given also, several times a day, one drachm to two drachms of water, previously boiled and cooled.

Where no food was retained by the stomach, nutritive enemata were given every four hours of one-half ounce of peptonized milk alone, or, combined with the sarcopeptones, one-half drachm to one drachm. To this stimulants were added if necessary. If the rectum had become irritable, an astringent injection was given one to two hours before the enema. This might consist of ten grains of tannin to one half-ounce of water; one-half drachm of the subnitrate of bismuth to one half-ounce of water; or one-fourth grain of nitrate of silver to one-half ounce of water. One to two drops of the deodorized tincture of opium were added to the injection where required. The bowel was flushed with warm water just before the nutritive enema was given. In cases where it was found that milk could not be taken at all, the following artificial foods were tried: Mellin's, Carnrick's, Malted Milk, Horlick's, and Imperial Granum. The results may be briefly summed up as follows:

7	did well	and 4	badly	on Mellin's Food.
1	"	2	"	Imperial Granum.
4	"	3	"	Malted Food.
7	"	7	"	Carnrick's.

Nineteen cases could take pancreatized milk from the beginning; 13 could take it at intervals. Nineteen could take sterilized milk undigested from the beginning; 29 could take it after a time, varying from twenty-four hours to three or four days. Five could take the undi-

gested sterilized milk, but could not take pancreatized milk, while 17 could not at any time take milk. It is apparent that milk has been preferred to the prepared foods in the larger number of cases. A considerable degree of our success with its use has been due, however, undoubtedly, to the extreme care in its selection, preservation, and preparation.

Baths and Massage.—All the children were bathed twice a day quickly, and where the debility was great the bath was followed by an oil rub—cod-liver oil four ounces, alcohol one ounce, being used. The bath in such cases consisted in a quick sponge in water of from 95° to 105° F. The oil inunction was found of special service in cases of dry, wrinkled skin, irritability, and glandular inactivity. The temperature of the bath has been gradually reduced as the child gained in strength, but has at no time been given below 60° F. Where convalescence has been slow, the child has been rubbed briskly with the hand over the loins and back until the skin was red, placed in warm water in the sitting position, and had turned over the shoulders and back a pint of cold salt water and then quickly dried with a thick soft towel. This was repeated daily if the reaction was good. General massage was given in some cases.

Case I.—Clara, aged fifteen months; admitted with pneumonia and pleurisy in November, made a good recovery, but was slow in gaining weight and strength. On admission she weighed fourteen and a half pounds; when resolution was completed she weighed only twelve and a half pounds, and remained very listless and the muscles flabby. December 15th, massage was ordered, followed by cod-liver oil inunctions. The appetite soon improved and the countenance brightened. The child now weighs fourteen and a half pounds; is able to sit in a chair, and attempts to walk.

Case II.—Theresa, aged one year; had been ill all summer with vomiting and diarrhœa. This condition was relieved, but the child remained greatly depressed. The weight was but eleven and a half pounds, and the child would lie in one position all day, apparently unable to move. Faradization and massage were used daily, followed by inunctions of cod-liver oil. Improvement was in every respect marvellous. The appetite increased, gradually the limbs began to be moved, and, after one month of treatment, the child can stand alone, and weighs sixteen and one-fourth pounds.

Case III.—Frances, aged thirteen months; admitted in September with gastro-intestinal catarrh; made a slow convalescence, remaining thin. She could not raise the hand, and would lie listless all day. She weighed but nine pounds. November 27th, massage was commenced, followed by inunctions of cod-liver oil. She now weighs ten pounds, is able to sit up, and moves her arms and legs for the first time since her admission. The treatment is continued.

Case IV.—Ethel, aged six months; was admitted in October, weighing eight and three-fourth pounds; suffered from gastro-intestinal catarrh. This condition improved, and the child ate and slept well, but remained constipated. November 8th, the weight had increased to ten and three-fourth pounds. Massage was commenced, and continued until the child was discharged, December 14th, with normal stools and weighing thirteen and three-fourth pounds.

Case V.—Tom, aged one year; had suffered all summer with gastro-intestinal catarrh. This condition had been controlled, but there had been no gain in weight, which remained at about thirteen pounds. Massage and oil inunctions were commenced in October. The child immediately began to gain in weight, and now weighs seventeen pounds, can stand alone, and forcibly move his limbs.

Flannels merit a separate place in the consideration of the treatment of these children. The entire surface was covered by thick flannels. The chest and abdomen, from the neck to the hips, were in all cases covered by a thick bias band. This was cut from twilled flannel, which adapts itself to the form readily, and was made twelve inches broad by three-fourths of a yard long. This was changed at night for one precisely similar, no article worn during the day remained on at night, and all clothing to be reworn was exposed to the air for several hours. Hot water-bags were used in cases of cold feet, colic, and subnormal temperature.

In acute febrile disorders accompanied by undigested stools, mucus, and fetor, Leaming's mixture of castor-oil was given, one-half to one drachm after each stool, until the character changed; or, if stomach symptoms and acidity of the stools were marked, the aromatic syrup of rhubarb, with bicarbonate of soda, with or without paregoric, as needed, was given in the same way. No one remedy, however, has given such complete satisfaction in obstinate cases, with irritability, wasting, anorexia, indurate inguinal glands, with or without fever, as calomel in small and frequently repeated doses of one-twelfth to one-sixth grain every two hours, with or without bismuth or soda, or both combined, until a change occurred in the character of the stools. It was then interrupted for antiseptics, astringents, or tonics. Frequently the calomel was repeated every four to six days, for two or three weeks, before convalescence was established. Another way of exhibiting this drug has been to give one-thirty-second grain every two hours for twenty-four hours; then one-eighteenth grain every four hours for twenty-four hours; and then one-sixth grain every six hours for twenty-four to forty-eight hours. The following cases, with a non-syphilitic history, were successfully treated in this way:

Case I.—Evelyn, aged six months; admitted with alternate constipation and diarrhœa, complicated with chronic bronchitis. The inguinal glands were enlarged. After the calomel treatment the apathetic look disappeared, the bowels became normal, glands less indurated, food was digested, and on sterilized milk and cod-liver oil the child made a rapid convalescence.

Case II.—Fanny, aged fourteen months; admitted in September with gastro-intestinal catarrh, had improved somewhat, but remained remarkably thin and without muscular power. There were enlarged inguinal and mesenteric glands, and enlarged abdominal superficial veins. At the time the calomel was given the child had a subacute bronchitis and four to ten stools daily; the rectum prolapsed. The stools were at once reduced to one or two daily, and the child gained the first week one-half pound. In the second week she gained two-thirds of a pound, and could sit propped up with pillows in bed. In the third week the digestion began to lag, and the stools were increased in frequency. The calomel was repeated, with a similar improvement. The diminution in the size of the glands was very apparent after the use of the drug.

Case III.—Henrietta, aged nine months; admitted in September with entero-colitis and subacute bronchitis. The temperature varied between 97° and 104° F., the greater part of the time being nearly normal. Treatment by regulation of diet, correctives, antiseptics, and irrigation did not apparently accomplish much, the emaciation became extreme, and the child was unable to move her limbs. She was having loose stools containing mucus and blood when the calomel was given. After three days' exhibition of the calomel it was discontinued; the tincture of nux vomica, one-fourth to one-half a drop, was given in ten to thirty drops of the infusion of chamomile; also cod-liver oil, ten to fifteen drops with one to two drops of the spirits of ether, t.i.d. The child gained two and one-half pounds during the succeeding month.

Case IV.—Mary M——, aged nine months; admitted November 2d with entero-colitis. Antiseptic, astringent, and corrective medication, also irrigation—all did well in turn—but the effect was not permanent. What the child gained one week she lost the following. December 10th, the stools continuing to contain mucus and blood, calomel was given in the doses mentioned, and was followed

by the bitter infusion and the liquid nitrate of iron. Permanent improvement dated from this treatment. The child gained one-half pound the first week.

CASE V.—Louise, aged three months, weight six and one-half pounds; admitted November 3d; gastro-intestinal catarrh. The usual astringents and antiseptics produced but little effect. The stools were one week good and the next week bad. After calomel there was improvement, which persisted until the child left the hospital.

CASE VI.—Frank, aged fifteen months; chronic bronchitis, temperature normal; pulse, 128 to 130, fair; respiration 68 to 72. The physical signs improved, as shown by the examination of the chest, but with little diminution in the frequency of the respiration. Calomel was given in the doses mentioned for four days, and at the end of that time the respiration was 30, and afterward remained low.

Irrigation of the bowel was resorted to where diarrhœa persisted after unloading the stomach and bowels, and particularly where there had been an excessive drain of fluids and thrombosis of the cerebral sinuses were feared. The water, previously boiled, was used cold if the temperature were high, and quite warm where the temperature was low or the vitality depressed. The irrigation was made by means of No. 9 soft rubber catheter, to which a funnel was attached by means of a piece of rubber tubing. The douching was continued until the water returned clear.

Patients previously very fretful would frequently go to sleep during the irrigation, and remain quiet for a number of hours afterward. Frequently the stools would be controlled without medication, but where this was not the case tr. opii, deodorized, one to three drops, with starch, or bismuth, or tannic acid, were injected, according to the indications. The irrigations were given once a day where needed. If there was reason to suspect ulceration of the colon, a high injection of silver, gr. ij., water, ʒ iv. (which was returned through tube immediately), preceded the starch-and-opium injection.

LAVAGE.—A number of cases of gastro-intestinal disorders which did not respond to regulation of the diet, medication, and irrigation of the bowels were treated with lavage. The treatment was applied as a last resort, and not because the cases were such as would show typical results. August 21st there were four of such desperate cases in the ward, with pronounced gastric symptoms. Lavage with tepid salt-water was used once daily, twenty minutes before feeding. A baby's stomach-tube, slightly larger than a No. 9 catheter, with a funnel attached, was used, care being taken not to elevate the funnel more than six inches above the head of the child, who was lying upon the left side upon the nurse's lap. Other cases, admitted later, which did not soon yield to other treatment, were also given the advantage of this method, which was carried out systematically for a month. During this time eighteen cases were treated. Of these twelve died. Of the twelve who died, abundant cause was found in the clinical history and in the lesions which the autopsies disclosed. The prognosis, as has been said, was in all of these cases grave when the treatment was undertaken. Of the remaining six cases, four were discharged cured, one on the eighth day, having had four treatments; one on the fifteenth day, having had eight treatments; one on the seventeenth day, having had three treatments; and one on the eighteenth day, having had two treatments. The other two were improved, but left before their recovery was complete, one on the seventh and one on the twenty-first day.

While this manner of application cannot be considered a fair test of the value of the treatment, it will furnish, perhaps, some incidental information regarding the precautions necessary when babies are subjected to lavage, also perhaps some of the most common results.

1. In these cases the secretion of mucus by the stomach seemed to be controlled. In cases where a large amount had been removed by the first washing, very little was found in the second and third, and later none at all. 2. The child was, as a rule, nauseated for the first time or two, but not during the later applications. 3. The pulse, which was always taken just before the operation, immediately after, and again one hour after, always showed a rise of from ten to twenty-five beats during the operation, and at the same time a diminution in force, but generally would fall during the succeeding hour to the rate which had preceded the operation. Sometimes, however, stimulants were needed. In very delicate children, not infrequently the pulse remained a trifle higher and weaker than before the operation, and if lavage were continued for a number of consecutive days a gradual loss of power and increase in the number of beats were noted. If, however, the treatment was interrupted, the usual frequency would return. This depression could not have been due to fright, as, though the child might be annoyed by the first treatment, later he would lie quietly, sucking or biting the tube and watching the funnel. In several cases the child was not inconvenienced from the first. 4. In one case spasmodic symptoms appeared about three hours after lavage. In this case the child did not take food well, and was fed through the tube while in position.

Lavage would therefore appear to be an advantage in sthenic cases, but since in all cases it is accompanied by a certain amount of shock great care should be exercised. In all cases the treatment should be administered by the physician, and stimulants should be given through the tube if needed.

During December lavage was used in five additional cases of children, one to two months old, where the indigestion was not corrected by regulation of food and drugs. In all five cases the fontanelle was depressed, the pulse very weak, and there was little hope of recovery. Stimulants were given before the operation. In all cases the restlessness was quieted at once, although the pulse increased ten to twenty beats, and was difficult to count. Food was given at the end of one-half hour, and was retained for the first time in days. The improvement continued in one case until the fifth day, when the lavage was repeated. In another case it was repeated upon the sixth day, while two cases convalesced and did not need a repetition after one treatment. In these very young children shock was not more marked than in the child of one year or eighteen months; but, as previously stated, the child should be carefully watched after the operation. Where, however, other methods fail, the little patients should be given the advantages of this method of treat ment.

ANTISEPTICS.—After free evacuation the following antiseptics have been used: Bismuth, resorcin, salol, creolin, pancrobilin, sodii salicylate, and merc. bichloride. Bismuth has been used in almost all cases. Finding upon autopsy that the mucous membrane of the duodenum was, as a rule, so swollen that bile could be scarcely forced from the gall-bladder into the intestine, it seemed a logical idea to supply bile. Pancrobilin has, therefore, been considerably used, and with apparently good result. Resorcin was given in seventeen cases with fair results. In four cases, however, it was found that after continuing the drug several weeks it interfered with the kidneys, and gave rise to violet-colored urine, which upon standing became black. In two of the four cases suppression was induced, lasting eight to ten hours. Creolin in half-drop doses, suggested by Dr. Kinnicut in consultation, was used in twenty-one cases with excellent results. In two cases, however, green urine was voided and suppression supervened, lasting a number of hours. Salicylate of sodium was given, one-half grain every two hours, in several cases of marked acidity of the gastro-intestinal tract and where indicated by acute rheumatism or tonsillitis. The bichloride of mercury, $\frac{1}{100}$ grain, was used in a number of cases with a fair result. Salol was used in four cases in a dose of one-half grain. The results were not satisfactory. In prescribing medicine glycerine has been

used to sweeten it instead of syrup. Paregoric and the deodorized tincture of opium have been used. Morphine, $\frac{1}{14}$ grain dose, was given hypodermically in one case of uræmic convulsions, controlling spasm. Efforts were, however, made to limit the use of this drug and to allay pain by heat. Where colics did not yield to hot poultices or hot bags the nurse was directed to give one dose of "baby mixture." This consisted of one-half grain of sodii bicarb., five drops of spirits of chloroform, ten drops of glycerine, made up with water one drachm. This was added to two teaspoonfuls of hot water, the cup having been previously warmed by dipping into hot water. It was given quickly, and repeated in one-half hour if the pain was not controlled. Where the child was wakeful at night the tincture of hyoscyamus or the compound spirits of lavender was given in two- to five-drop doses in the "baby mixture." For an accumulation of gas in the intestine a quarter to one-half drop of the tincture of capsicum, or the same dose of the tincture of assafœtida, was added to the "baby-mixture," or a drachm of the tincture of assafœtida, diluted with warm water, ʒ iv., was injected into the bowel. As alkalies, chalk or the carbonate or phosphate of soda were generally used. As astringents, bismuth, nitrate of silver, tannin, or krameria. As stimulants, alcohol was usually preferred on account of its purity and lack of taste. Musk was used by suppository in one-grain doses where collapse was threatened. In cases of high temperature, where alcohol was not sufficient, camphor was added. Strophanthus, one-fourth to one-half drop every half-hour, one or two hours, has given most gratifying results, as shown by the following cases:

Case I.—Cecilia, aged fifteen months; entered in November with pneumonia of lower lobe, left side, and pleurisy of both sides. The father had been carrying her around the city all day in a cold storm, trying to find a hospital which would admit her. The mother had been intemperate for several years, and was at the time suffering from a two weeks' debauch. The child was not yet weaned, and was presented with its clothing saturated and in collapse. Temperature, 104.8° F.; respiration, 60; pulse, 140. Tr. digitalis, gt. one, every four hours, and brandy, one-half drachm, every one-half hour, produced but little improvement in the pulse. Nutritive enemata, containing one drachm of brandy, every two hours were added. Four and one-half ounces of brandy were given each twenty-four hours, for three days, the pulse remaining 136 to 148, and compressible, while the temperature had fallen to 99° F. Musk and camphor were then added, but the pulse continued at 148 and intermittent. The child was seen in consultation with Dr. A. H. Smith, who suggested the tincture of strophanthus, one-half drop every two hours. In twelve hours the pulse had fallen to 124, and had become regular and increased in force. The brandy was then diminished to one-half drachm every two hours. Within a week the pulse had fallen to 108, the brandy replaced by bitter infusions, and the strophanthus given t.i.d. The child made a good recovery, resolution occurring upon the thirteenth day.

Case II.—Kate ——, aged four months, suffering from gastro-intestinal catarrh. The movements had become normal, but the vitality remained low. The pulse was 156 and very compressible, although brandy was freely exhibited. November 23d, strophanthus commenced to be given gtt. 1-2 q. 1 h. In twenty-four hours the pulse had fallen to 126, and the quality was fair. November 25th the pulse was 120. The medicine was continued every one hour. November 27th the medicine was given every three hours. From November 28th it was given only three times a day, and was continued in this dose for one week, the pulse remaining at 112, the improvement being permanent.

Case III.—Lottie——, aged three months; gastro-intestinal catarrh. The temperature normal or below; the pulse, 126 to 156, and very poor. The patient had been taking one-half drachm brandy and three drops aromatic ammonia every three hours.

November 24th the pulse was 128 and intermittent. Tincture of strophanthus was ordered, one-half drop every three hours. November 25th, pulse, 118, stronger and intermissions overcome. November 30th, pulse, 108, good; strophanthus given only t.i.d. December 6th, strophanthus stopped as no longer necessary. December 13th, resumed for three days, the pulse having risen to 116, and less strong. It was not necessary to again repeat it.

Case IV.—Fred ——, aged one year; received in October for gastro-intestinal disorder. Temperature below 100° F.; pulse, 120 to 144, quality poor; brandy and ammonia failing to improve the pulse. November 22d strophanthus commenced to be given, one half drop every two hours. At the end of two days the pulse had fallen to 102, with marked improvement in quality, and other stimulants were discontinued. November 5th, the strophanthus was reduced to half drops every four hours. November 27th, to t.i.d. The pulse continued 108, and full, and the child convalesced, without further interruption, on nux vomica and bitter infusions.

Packs have been found more useful than antipyretics by the stomach, in the majority of cases. They were applied of blood-heat, cool, and iced, according to the indications, and covered with thick, dry flannels. The pack from ice-water was of especial value in lung troubles, as it induced a long, deep inspiration. It was changed as soon as hot, and when the temperature was reduced it was allowed to remain on, without changing, twenty-four to forty-eight hours to keep skin active. When packs could not be borne, or were insufficient, quinine was given. Recently phenacetin has been used in doses of one grain every one, two, or four hours. The results have been apparently satisfactory, as shown by the following cases:

Case I.—George B——, aged three months; admitted December 5th, with pneumonia, both bases posteriorly. December 5th, 8 P.M., temperature, 105° F.; pulse, 172; respiration, 92. Poultices were applied to the chest, and phenacetin given, one grain every two hours. At 10.30. P.M., temperature, 102.4° F.; pulse, 160; respiration, 80. December 6th, 1 A.M., temperature, 101.4° F.; pulse, 146; respiration, 68. At 3 A.M., temperature, 100.4° F.; pulse, 132; respiration, 60. The phenacetin was then stopped. There had been no depression of the pulse, and no sweating.

In this same case, December 9th, an exacerbation occurred; temperature, 106° F.; pulse, 160, irregular; respiration, 99. Phenacetin was again given, one grain every two hours. At 7 A.M., temperature, 104° F; pulse, 152, regular; respiration, 72. At 9 A.M., temperature, 102.6° F.; pulse, 132; respiration, 76; and at 11 A.M., temperature, 99.6° F.; pulse, 108; respiration, 48, when the phenacetin was discontinued. The temperature did not again rise above 101°.

Case II.—Lizzie, aged two months; admitted with gastro-entero-colitis. November 29th, temperature, 102.4° F.; pulse, 116; respiration, 58. At 11 A.M. one grain of phenacetin was given. At 2 P.M., temperature, 100.8° F.; pulse, 96; respiration, 44. November 30th, 9 A.M., temperature, 104.8° F.; pulse, 140; respiration, 54; one grain was given. At 10 A.M., temperature, 101.6° F.; pulse, 134; respiration, 48. December 3d, 2.30 A.M., temperature, 102.4° F.; pulse, 140; respiration, 48; one grain was again given. At 4 A.M., temperature, 101.4° F.; pulse, 136; respiration, 44. At 6 A.M., temperature, 100° F.; pulse, 132; respiration, 36.

Case III.—Joseph R——, four months; admitted with subacute bronchitis. December 6th, 11.30 A.M., temperature, 102° F.; pulse, 148; respiration, 50; was given one grain of phenacetin. At 2 P.M., temperature, 100.2° F.; pulse, 130; respiration, 46. At 4 P.M., temperature, 100° F.; pulse, 120; respiration, 40. At 6 P.M., temperature, 98.9° F.; pulse, 118; respiration, 38.

Case IV.—Harry, aged six months; subacute bronchitis and gastro-entero-colitis. December 3d, 6 A.M., temperature, 104° F.; pulse, 168; respiration, 60. Phenacetin

was ordered every two hours. December 23d, 8 A.M., temperaure, 103° F.; pulse, 144; respiration, 52. 11 A.M., temperature, 102.6° F.; pulse, 136; respiration, 46. 2 P.M., temperature, 101.4° F.; pulse, 120; respiration, 50. 4 P.M., temperature, 100.2° F.; pulse, 120; respiration, 44. The medicine was discontinued. December 25th, 5.30 P.M., temperature, 102.6° F.; pulse, 136; respiration, 56; one grain ordered every two hours. At 7 P.M., temperature, 102° F.; pulse, 120; respiration, 54. 9 P.M., temperature, 101° F.; pulse, 118; respiration, 38. Phenacetin discontinued. At 11 P.M., temperature, 100.5° F.; pulse, 108; respiration, 30. The temperature did not again rise above 100°.

Other cases might be cited. At no time in the course of these cases was there any disagreeable after-effect, such as cyanosis, collapse, depression, or sweating. The drug never caused vomiting or eruptions as noted by some experimenters; while its dose being one-half that of antipyrene, with its lack of taste, renders it especially easy of administration. It was given generally in alcohol and water, as it is insoluble in water alone. The pulse and respiration always decreased in proportion with the temperature. To guard against depression, the drug was always discontinued when the temperature had fallen to 101° or 100.5° F. It is probably for this reason that the depressing effects were avoided.

ERGOT.—In cases of threatened heart failure, where the complexion was earthy and the extremities purple, the addition of ergot to other remedies has established a more active general circulation.

CASE I.—Kate W——, aged two months; admitted September 17th with gastro-enteritis. The temperature 99° to 103° F., and the pulse 140, very weak, and the fontanelle depressed, the superficial veins of the scalp distended, and the lips and extremities blue. Stimulants had been freely used, but without effect. Fifteen drops of the fluid extract of ergot were given by rectum every four hours, and continued until September 30th, when the cyanotic condition had been entirely relieved, and the pulse was 116 and of good character. The child was discharged October 9th, cured.

CASE II.—Eliza, aged three months; admitted with gastro-intestinal catarrh. The temperature had been normal or below; pulse 156 to 120. The intestinal trouble was overcome, but the child remained in a cyanotic condition. November 24th, on musk, alcohol, camphor, and strophanthus the pulse remained 156. Ergot was now given in doses of ten drops, with the food, every three hours. November 28th, the pulse was 130 and the extremities were warm. November 30th, the pulse was 120, of good quality. The skin was normal in color and the ergot was stopped. On December 7th, and again on the 21st, the cyanosis returned and the ergot was resumed, each time with an equally good result.

CASE II.—Mamie S——, aged two weeks; admitted with gastro-intestinal catarrh. No rise of temperature; pulse, 140 to 112, and very weak. Alcohol, ammonia, and musk having only a temporary effect, and the cyanosis becoming more marked, ergot was given, ten drops in the food, every two hours. This disturbed the stomach, and one-half drachm was given by rectum every four hours. The pulse improved and the cyanosis rapidly disappeared. Returning later, the ergot was again given by rectum every three hours, with the same result.

A word should be added in regard to the nursing in our hospital. We do not expect a single nurse to take care of a whole wardful of sick babies. The nurses are especially trained in the hospital for this work, with an average of one nurse to every four patients during the day, and one to every eight patients during the night.

Further, we do not try to reduce our expenses to the lowest possible cost, but, relying upon the liberality of our patrons, put the patients' welfare ahead of every other consideration. The average cost of maintenance in the Babies' Hospital is four dollars for each patient per week.

265 LEXINGTON AVENUE.

Clinical Department.

CLINICAL REPORT ON SULFONAL.

BY ELON N. CARPENTER, M.D.,

MEDICAL SUPERINTENDENT, LONG ISLAND HOME, AMITYVILLE, L. I.

DURING the month of May, 1888, I was requested to use sulfonal in cases of insomnia accompanying acute and chronic insanity. At that time I had but little knowledge of sulfonal, and was quite reluctant even to give it a trial. Finally, after reading several articles regarding it, I concluded to try it. I did so, beginning in the month of June. In eighty-five per cent. of the cases the result has been very satisfactory. December 15, 1888, my attention was called again to sulfonal by Dr. William H. Flint's article in THE MEDICAL RECORD of that date. I decided to make a thorough test of it in cases of insanity and give my personal attention to the same. I selected several of the most violent and destructive patients in the Home, who were in the habit of receiving narcotics or hypnotics each night. The following is the result:

CASE I.—Woman, married, aged thirty-two, chronic mania of three years' standing. Violent. Been receiving medicine at night for past two years. For past month she has been receiving forty-five grains of chloral hydrate, forty-five minims fluid extract hyoscyamus, which caused her to sleep from 11 P.M. until 5 A.M. Administered forty-five grains of sulfonal at 8.10 P.M., patient asleep at 10.45 P.M.; slept soundly until 5.30 A.M.; very quiet during the day. Second trial: Gave thirty grains at 8.30 P.M.; was asleep in sixty minutes; awoke at 5 A.M. Third trial: 8 P.M., forty-five grains; asleep at 8.45 P.M.; awoke at 6 A.M. Fourth trial: 8 P.M., forty-five grains; asleep in thirty minutes; slept until 7 A.M.

CASE II.—Woman, aged twenty-nine, unmarried. Chronic mania for past seven years. Destructive. Trial first: 8.10 P.M., forty-five grains; went to sleep in two hours; slept well until 5.30 A.M.; quiet during the day; fell asleep at 2.30 P.M.; slept one hour. Second trial: 8.30 P.M., thirty grains; no effect; 2 A.M., gave forty-five grains chloral hydrate; she slept until 6 A.M. Third trial: 8 P.M., forty-five grains; went to sleep at 1 A.M.; more destructive than usual; awoke, 6.10 A.M. Fourth trial: 8 P.M., forty-five grains; 9 P.M., asleep; slept well until 6 A.M.

CASE III.—Woman, unmarried, aged forty-four. Recurrent mania, six years' standing. Very noisy, but not violent or destructive. 8.10 P.M., forty-five grains; went to sleep at 10.40 P.M.; slept until 3 A.M.; dose repeated at 3.30 A.M.; went to sleep at once and slept until noon. Second trial: 9 P.M., thirty grains; 9.30 P.M., sleeping; slept until 6 A.M.; awoke, complained of headache and nausea, with some little vomiting; went to sleep at 7.30 A.M.; slept until noon. Third trial: 8 P.M., thirty grains; asleep at 9 P.M.: awoke at 1 A.M.; asleep at 2.05 A.M.; awoke at 6.30 A.M.; very noisy all day. Fourth trial: 8 P.M., thirty grains; asleep at 8.45 P.M.; awoke at 7 A.M.

CASE IV.—Woman, unmarried, aged thirty-five, melancholia: 8.10 P.M., thirty grains; asleep at 10.40 P.M.; awoke at 5.30 A.M.; at 8.30 P.M. gave twenty-five minims of fluid extract of hyoscyamus; slept from 10 P.M. until 4 A.M. Second trial: 8 P.M., thirty grains; asleep at 9.18 P.M.; awoke at 6.08 A.M. Third trial: 8 P.M., thirty grains; asleep at 8.40 P.M.; slept until 6.35 A.M.

CASE V.—Woman, married, aged fifty-nine, chronic melancholia with cardiac hypertrophy; interstitial nephritis, acute: 8.10 P.M., thirty grains; restless until 2.30 A.M.; dose repeated; asleep in fifteen minutes. The nurse awoke her at 8 A.M.; she refused to eat; immediately went to sleep; slept until noon; ate very little during the day. Second trial: 8 P.M., thirty grains; slept from 9.30 P.M. to 8 A.M. very soundly, when she was awakened; respiration, 16; pulse, 60; temperature, 98° F.; was drowsy all day; medicine discontinued; asleep at 10 P.M.; sleep broken

all night; 8 A.M., respiration, 21; pulse, 80; temperature normal; no medicine at night; 10 P.M., asleep but quite restless; much demented following day.

CASE VI.—Woman, married, aged sixty-one, hysteria: 8.10 P.M., twenty grains; slept two hours during the night; 8 P.M., gave chloral hydrate, twenty-five grains; slept from 9.30 P.M. until 6.30 A.M. Second trial: 8 P.M., thirty grains; asleep at 9.30 P.M.; awoke, 7.12 A.M. Third trial: 8.30 P.M., thirty grains; asleep at 12.05 A.M., awoke, 4.30 A.M.; very drowsy and no appetite for breakfast.

CASE VII.—Woman, married, aged twenty-nine, puerperal mania: 8.10 P.M., thirty grains; asleep at 11; awoke at 4 A.M.; 8 P.M., chloral hydrate, thirty grains; slept from 9.30 P.M. until 6.30 A.M. Second trial: 8 P.M., forty-five grains; 11 P.M., thirty grains; asleep, 11.30; slept until 7 A.M. Third trial: 8 P.M., forty-five grains; asleep at 10 P.M.; awoke the following day at 12.10 P.M.

CASE VIII.—Man, single, aged forty-seven, chronic epilepsy of seventeen years' standing, been taking one hundred and fifty grains chloral hydrate in two doses each night for the past year: 8 P.M., sixty grains; no sleep; 11 P.M., seventy-five grains chloral hydrate and thirty grains sulfonal; went to sleep at 11.15 P.M.; slept until 5.30 A.M.; complained of feeling stupid. Second trial: 8 P.M., seventy-five grains chloral hydrate and sixty grains sulfonal; asleep, 8.55 P.M.; awoke at 6 A.M.; slept very soundly. Third trial: 8 P.M., thirty grains of sulfonal and seventy-five grains chloral hydrate; slept well until 7 A.M.; very drowsy all day. Fourth trial: 8 P.M., fifty grains chloral hydrate and thirty grains sulfonal; asleep at 9.15 P.M.; awoke, 6 A.M.; complained of being drowsy all the morning.

CASE IX.—Man, married, aged twenty-nine, epilepsy: 8 P.M., thirty grains; asleep at 11 P.M., until 5 A.M.; awoke and complained of headache, which lasted three hours. Second trial: 8 P.M., thirty grains; asleep, 10.30 P.M.; awoke, 5.30 A.M., with headache and nausea, which lasted until 10 A.M.; quite stupid; usually bright; discontinued medicine; 10 P.M., asleep; awoke, 5 A.M., quite refreshed. Third trial: 8 P.M., thirty grains; asleep at 10 P.M.; awoke, 6.30 A.M., with headache and nausea; no appetite during day.

CASE X.—Man, unmarried, aged thirty-five, general paresis, violent: 8 P.M., forty-five grains; asleep at 9 P.M.; awoke, 5 A.M. Second trial: 8 P.M., forty-five grains; asleep, at 9 P.M.; awoke at 6 A.M. Third trial: 8 P.M., forty-five grains; asleep, 8.45 P.M.; awoke, 5.30 A.M. Fourth trial: 8 P.M., thirty grains; asleep at 9 P.M.; awoke, 6 A.M.

CASE XI.—Man, single, aged twenty, epileptic: 8 P.M., thirty grains; asleep at 9 P.M.; awoke, 5.25 A.M. Second trial: 8 P.M., thirty grains; asleep at 8.45 P.M.; awoke, 6 A.M. Third trial: 8 P.M., thirty grains; asleep at 9.15 P.M.; awoke at 6.20 A.M. Fourth trial: 8 P.M., thirty grains; asleep at 9 P.M.; awoke at 6 A.M.

CASE XII.—Man, married, aged forty, general paresis: 8 P.M., thirty grains; asleep at 9 P.M.; awoke at 6 A.M.; slight headache. Second trial: 8 P.M., thirty grains; asleep at 9 P.M.; awoke at 6.10 A.M. with violent headache, and complained of thirst. Third trial: 8 P.M., twenty-five grains; asleep at 9 P.M.; awoke, 5.55 A.M.; no headache, feeling well. Fourth trial: 8 P.M., twenty-five grains; asleep, 8.45 P.M.; awoke, 6.15 A.M., much refreshed.

CASE XIII.—Man, single, aged twenty-eight, masturbator: 8 P.M., thirty grains; asleep at 9.10 P.M.; awoke, 6.05 A.M. Second trial: 8 P.M., thirty grains; asleep, 9.10 P.M.; awoke, 6 A.M.; complained of thirst. Third trial: 8 P.M., thirty grains; asleep at 8.50 P.M.; awoke at 6 A.M.; still complained of thirst. Fourth trial: 8 P.M., thirty grains; asleep at 9 P.M.; awoke, 5.30 A.M.

Explanatory reference regarding Cases II., III., IV., VIII., IX., XI., XIII.

CASE II.—One week prior to giving sulfonal, patient was receiving two forty-five-grain doses of chloral hydrate during the night. I desire to say this patient has been given every narcotic and hypnotic I know of, with but little effect, except chloral hydrate; she has had no medicine at all for the past week, sleeps well, and is quiet.

CASE III.—Patient has been in an asylum three times in six years. She is now taking fifteen-grain doses of sulfonal at night, and is more quiet during the day.

CASE IV.—Patient seldom slept over two hours during the night.

CASE VIII.—Was admitted to the Home, July, 1888; he had been in the habit of taking one hundred and fifty grains chloral hydrate at night for several months prior to his admission. I ordered him given seventy-five grains of chloral at 9 P.M., and seventy-five grains at 11 P.M. He generally went to sleep about 11.30. I made an effort to reduce his chloral, but with poor result, after keeping him on the mixed doses of chloral and sulfonal several days. I ordered the sulfonal discontinued, giving him seventy five grains of chloral in two doses at night; he has been sleeping well for the past ten days and made no complaint.

CASE IX.—Patient has been taking bromide of potassium, thirty grains three times a day; twenty grains chloral hydrate at bedtime.

CASE XI.—Epilepsy six years; been taking, for past two months, bromide of potassium, forty grains three times per day; twenty grains of chloral at night; unable to sleep without chloral. Since giving the sulfonal I ordered the chloral discontinued; he has slept well for the past week.

CASE XIII.—Admitted, January, 1888; has had the habit of masturbation for two years; he is quiet during the day, at night talks incessantly, at times maniacal; he now sleeps very well on fifteen grains sulfonal at night.

These histories, I believe, will show what the virtues of sulfonal are in cases of insomnia accompanying mental diseases. Out of several hundred doses of the drug given, I have detected but very little effect on the cutaneous or renal secretions, no constipation, some nausea and vomiting, but this appeared in cases of epilepsy exclusively.

MEDICAL AFFAIRS IN BULGARIA.—A general supervision over medical matters in Bulgaria is exercised by the Minister of the Interior, who is assisted by a council composed of the three head physicians of the Alexander Hospital in Sophar, a veterinary surgeon, and an officer of the State. This council is charged with the direction of sanitary matters, public hygiene, medico-legal questions, etc. There are thirty-four hospitals in the principality, six of which have accommodations for over one hundred patients each, seventeen for fifty patients, and eleven for less than fifty patients each. All the hospitals are under government control, and their expenses are met by the State treasury. The average cost per patient is about twenty cents a day. There are no military hospitals, and the army surgeons are forbidden to retain in the army infirmaries any but those suffering from minor wounds or who have a temperature of less than 99.5° F. All others are sent to the general hospitals. There is no medical school in the country, but there is a sort of training-school where instruction is given in nursing and minor surgery. The State employs one hundred physicians, at salaries ranging from $700 to $900 per annum, twenty of whom are attached to the larger hospitals, the others being district and cantonal physicians. Any graduate of a recognized foreign university who has acquired the right to practise medicine in the country in which he has obtained his degree is admitted to government service or private practice. If a physician have only a diploma, without having acquired the right to practise in the country from which he comes, he is required to submit to an examination in Bulgaria. The average government appropriation for medical service is $400,000 per annum. The general death-rate of the country is about twenty-eight per thousand.—*L'Union Médicale.*

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THE TREATMENT OF RECENT PLEURITIC EFFUSION BY SALINE CATHARTICS.

DIURETICS and cathartics have always been largely employed with a view to the reabsorption of fluids that have accumulated in the various cavities of the body. It is only recently, however, that the use of highly concentrated solution of saline cathartics has been urged for this purpose. In ascites and all dropsical conditions, evidence is not wanting to show that some good may be accomplished in this way.

Dr. P. Blaikie Smith, of the Aberdeen Royal Infirmary, has now extended the method so as to include pleural effusions. He says in the *British Medical Journal*, October 13, 1888, that those whose general practice it is to treat cases of considerable pleuritic effusion by tapping the pleural cavity must confess that, not infrequently, the fluid reaccumulates, and that it occasionally becomes purulent. Recognizing the truth of this clinical observation, he has for some time past discarded operative interference in such cases, relying, for the relief of the effusion, upon the effects produced by saline cathartics, administered in a concentrated form. This class of drugs primarily induces watery evacuations from the bowels, with the necessary result that the blood becomes inspissated and absorption stimulated. Bearing in mind this fact in therapeutics; recollecting, too, that serous exudations have been known to disappear during an attack of cholera (when the blood is to a great extent deprived of its watery element), and that the simple withdrawal of fluids from the diet has been advocated as curative of pleuritic effusion, it seemed reasonable to suppose that if a patient, the subject of this complaint, were starved of fluids and purged by salines, the resulting concentration of the blood would be remedied at the expense of the effusion. In this expectation he was not disappointed, and he gives the records of several cases successfully managed in this way. He uses the magnesium sulphate dissolved in as small a quantity of hot water as possible. The dose employed is two drachms to half an ounce twice a day.

Dr. Smith admits that patients of poor physique, or in whom a phthisical tendency exists, are ill suited for this plan of treatment. So, too, when dyspnœa is an urgent symptom, especially when accompanied by signs of collateral hyperæmia or œdema, the use of the trocar gives more speedy relief than that afforded by free purging. Still he concludes that one meets with many cases where the effusion is large and of recent occurrence, where dyspnœa is not pronounced, and where signs of physical and constitutional debility are absent. These are the cases which, according to him, are peculiarly adapted for treatment by this method.

BIRTH AND DEATH IN MASSACHUSETTS.

THE Forty-sixth Registration Report of Massachusetts, for the year 1887, contains a number of interesting facts bearing on the health, mortality, and social condition of that State. The well-known care which characterizes these reports gives the figures also a wide value to physicians, sanitarians, and economists. We shall present some of the more striking facts given in the report.

The greatest number of marriages takes place in October, November, and, *propter hoc*, the greatest number of births in August. The birth-rate is 26.45 to the 1,000 living, and the death-rate 20.28 per 1,000. The death-rate is greater than it was in the previous twelve years, and greater than it used to be from 1850 to 1862. The birth-rate and marriage-rate have, on the other hand, decreased. These figures do not compare favorably with those of European countries, if we except France and Hungary. Russia is the most prolific of all European countries, having a birth-rate of 49 4 per 1,000 of living population. Hungary, Austria, and Germany follow, while Ireland and France are at the bottom of the list, with Massachusetts close to them in the race. The ratio of male to female births was 105.2 to 100, a ratio that holds good all over the civilized world. The ratio of illegitimate births to the total births for a period of twenty years, in Massachusetts, is 16, figures very favorable to the continence and steady habits of the Massachusetts Yankee. The ratio in Bavaria, for example, is 152 per 1,000 births; in Austria, 134; in England, 53; in Greece, 12. The ratio of illegitimate children born of foreign mothers was 45.9 per cent., showing that the immigrant is a decided factor in the production of illegitimate children.

The death-rate shows that in Massachusetts, as elsewhere, there has been a steady decrease in deaths from constitutional diseases, and increase in deaths from local diseases. There is very little decrease in the deaths from any of the various zymotic diseases, if we except dysentery. The figures for croup, diphtheria, scarlet fever, are just about the same. On the whole, therefore, the statistics here given speak very poorly for the effectiveness or progressive influence of sanitary work.

Of local diseases, consumption and pneumonia have held the leading places as causes of death during the past decade, and evidently the Massachusetts lung is a weak organ. Nervous diseases have increased in frequency, if one may judge by the relatively greater number of deaths from apoplexy and cephalitis.

The death-rate from consumption shows a slight decrease as compared with the ratio for the past twenty-three years. An interesting table is given, showing the death-rate from this disease at different ages, and proving that in 1887, at least, the period of greatest mortality was from 20 to 30, next from 30 to 40, and then from 70 to 80.

The deaths by suicides were 173 in 1887. The suicide ratio in Massachusetts is not, however, a very high one, being 8.6 per 100,000 of population. In England it is

8.1; in France it is 17. There is a remarkable increase in the number of suicides from arsenical poisoning.

We are glad, in conclusion, to note an emphatic tribute made by the editor of the report, Dr. Samuel W. Abbott, to the efficacy of the medical examiner system, as against the older coroner's jury system.

THE MORTALITY OF PNEUMONIA AND TYPHOID FEVER.

In the Annual Report of the United States Marine Hospital Service for 1888, Dr. Charles E. Banks gives us some interesting statistical studies regarding the past and present mortality of pneumonia and typhoid fever.

Reports of the Service since 1872, exclusive of three years, show a total of 3,011 cases and 496 deaths, giving a ratio of sixteen per cent. From 1880 to 1887, the number of cases was 1,649, deaths 311, mortality-rate 18.8 per cent. This would show an increased mortality-rate even in the last decade, an increase which may possibly be attributed to the antipyretic era in therapeutics.

The figures show the highest death-rate (24.1 per cent.) to exist in the Middle Atlantic District, next in the District of the Great Lakes (22.2 per cent.), and in Mississippi, 20.4 per cent., while it is lowest in Ohio (15.4 per cent.).

The average death-rate from typhoid fever in the Pennsylvania Hospital, for a period of twenty years, was 19.5 per cent. The records of the Marine Hospital Service from 1872 show a total of 2,503 cases, with 374 deaths, an average of 14.9 per cent. The greatest number of cases is reported from the Great Lakes, while the Gulf District shows the extraordinarily high mortality-rate of 41.6 per cent. Next to this comes the Mississippi District, with a ratio of 23.6 per cent. The North Atlantic District shows the mortality-rate of 8.9 per cent. (304 cases).

It may be assumed from these statistics that typhoid fever is much more fatal in southern districts than in the north.

In this connection it may be interesting to mention some recent French statistics, given by M. Jubel-Renoy at a meeting of the Société Médicale des Hôpitaux. Doctor Renoy states that, by rigorously treating his cases according to the method of Brand, he has had a mortality of only seven per cent. Adding to his statistics those of MM. Rochard and Josias, a total of 105 cases is given, with a mortality of 4.76 per cent. To all this M. Labbe replies by saying that with a simple expectant treatment his mortality-rate was only five per cent. The cases were all, it is presumed, in private practice.

THE UTILITY OF COLDS.

The question is often asked, how can we prevent "catching colds." The answer is a very simple one: There is no way. Despite the thousands of learned discussions over this matter, the rolling seasons produce just about the same crop of coryzas. Certain individuals adopt some special fad, and for a long time secure immunity; but the mass of people go on sneezing and blowing and snuffling in the same stertorous way. The catching of "colds" is a matter of constitutional vigor. The robust do not catch cold as long as they are robust. But as long as the valetudinarian is with us, we shall always have coryzas, eyelids will redden, noses swell, and pituitary membranes give forth their April showers. But perhaps the coryza has, after all, a conservative function, it warns people of their susceptibility to pathological change; it is a kind of advance-guard against the more serious enemies, bronchitis, pneumonia, and phthisis. In the economy of nature the respiratory organs lack a little in good adjustment to the environment. One-fourth of all deaths comes from the succumbing of these organs to pathological changes. We need to be reminded of the weaknesses of our respiratory mucous membranes. In this emergency the human race was provided with acute rhinitis. Such, at least, is one explanation which teleology gives for the existence of a disorder whose unrecognized benefactions we should be more ready to recognize. As the sinful man needs religion, so the imprudent invalid requires the admonitions of a common rhinitis.

THE REPORT OF THE SURGEON-GENERAL OF THE ARMY.

The Report of the Surgeon-General of the Army for the year 1887–88 is at hand, and is a somewhat larger volume than usual. Over one hundred pages are devoted to a careful analysis of the diseases affecting the army in the military stations. A map is given also, showing the locality and capacity of the military hospitals throughout the United States.

The mean strength of the army for the year was 23,841. Among this number there were 29,727 admissions to the sick report during the year, and an average of 15.5 days lost on account of sickness for each man in the army.

The number of deaths from all causes was 214, or 8.12 per 1,000 of mean strength. The average number of persons constantly non-effective from sickness was 1,010.28. The history of the year shows that epidemic or infectious diseases did not attack the army with any special violence.

We learn that the Army Medical Museum has received 833 additional specimens during the year, making a total of 26,695. The Library has received 10,961 books and pamphlets, making a present total of 130,614. Volume X. of the "Index Catalogue" is now going to press.

The third and final part of the medical volume of "Medical and Surgical History of the War" is being issued.

Surgeon-General Moore says that the service now has 190 medical officers, of whom 15 are on sick-leave. The retirement of some of those now on sick-leave is advised, and an increase of 20 assistant surgeons recommended.

A New Site for the New York Academy of Medicine.—A building site of 75 × 100 feet, with the privilege of adding twenty-five feet, has been secured for the new academy and library, in West Forty-third Street, near Fifth Avenue.

Philadelphia Polyclinic.—Dr. B. Alexander Randall has been elected Professor of Diseases of the Ear, and Dr. Edward P. Davis has been chosen Professor of Obstetrics and Diseases of Children, in the Philadelphia Polyclinic and College for Graduates in Medicine.

News of the Week.

MARGARET ALDEN MILLER, as administratrix of the estate of her husband, Dr. Maurice Norton Miller, has begun proceedings in the Superior Court against Dr. Alfred L. Loomis, to recover $1,000 for services rendered in 1888, and other relief. She declares that her husband wrote the principal part of an essay which Dr. Loomis read at the third annual meeting of American Physicians at Washington, in September, 1888, and revised it for publication. Mrs. Miller has also petitioned Surrogate Ransom for an examination of Dr. Loomis, alleging that she believes certain of her husband's effects are in the possession of the Loomis Laboratory Corporation, at 414 East Twenty-sixth Street.

A GREAT STIR IN MEDICAL and political circles of New Orleans has been caused by the removal of Quarantine Officer Dr. Aby, and the appointment in his place of Dr. Andrews. The State Board of Health, an assemblage of merchants, and another of citizens, have condemned the Governor's action, and appointed committees to wait upon him and request his reconsideration of Dr. Austin's appointment.

THE MORTALITY-RATE IN NEW YORK STATE is a decidedly high one for the past year. The State Board of Health's bulletins show that, during 1888, 104,450 deaths were reported in time for insertion in the bulletin. There were in addition, of delayed records reported, sufficient to bring the mortality for the year up to 110,000. The death-rate for the State from all causes is placed at 19.64 per 1,000 of the population for the year. The proportion of deaths under five years of age, for the past twelve months, was 36.5 per cent.; for 1885 this was 37.3; for 1886, 38; for 1887, 36.3; showing a slight variation year by year, and showing a slight diminution for the past year.

A NOVEL TREATMENT FOR PULMONARY HEMORRHAGE.—At the meeting of the Medical Society of Victoria, on November 14th, Dr. R. A. Stirling narrated a case of profuse bleeding from the apex of the left lung, in which hypodermic injections of ergotin and other commonly used remedial measures had failed to check the hemorrhage, which was sufficiently severe to threaten immediate death by suffocation, but in which the hypodermic injection of $\frac{1}{100}$ grain of atropine at once controlled the bleeding. During twenty-four hours the injections were repeated at intervals of every six hours; then, thinking that the stoppage might have been accidental, the doctor omitted the treatment for twelve hours, with the result of a fresh and severe attack, which was at once controlled by the renewal of the treatment.—*Therapeutic Gazette.*

SALICYLIC ACID.—The question has been raised of late as to the identity of the salicylic acid manufactured by chemical processes with that prepared from the oil of wintergreen and other plants. Serious complaints have been made from widely different sources that the therapeutical effects are not the same in both, and although chemists are prepared to assure us that they are chemically identical, medical men would do well to scan the results obtained in practice from the salts of one and the other origin.—*Medical Press.*

ANNOUNCEMENT OF THE ANNUAL PRIZE OF THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.—A prize, consisting of a gold medal of the value of one hundred dollars, is offered by the Medical Society of the County of New York for the best essay upon any medical or surgical subject submitted to the Prize Essay Committee on or before October 1, 1889, by any member of the Society. The essay must present sufficient original, experimental, or clinical observation to make it a useful contribution to medical knowledge. Essays in competition must be signed by a motto and accompanied by a sealed envelope inscribed with the motto, and containing the name and address of the author. The prize will be awarded at the annual meeting in October, and the name of the successful competitor will then be ascertained by opening the envelope marked with the motto corresponding to that upon the successful essay. All essays in completion must be sent before October 1st, to one of the members of the Committee.

E. H. GRANDIN,
W. G. THOMPSON,
M. ALLEN STARR,
Committee.

THE JENKS PRIZE.—The first triennial prize of two hundred and fifty dollars under the deed of trust of Mrs. William F. Jenks, has been awarded by the Prize Committee of the College of Physicians of Philadelphia, to John Strahan, M.D., M.Ch., M.A.O. (Royal University, Ireland), 247 North Queen Street, Belfast, Ireland, for the best essay on "The Diagnosis and Treatment of Extra-uterine Pregnancy." The writers of the unsuccessful essays can have them returned to any address they may name, by sending it and the motto which distinguished the essay, to the Chairman of the Prize Committee, Ellwood Wilson, M.D., College of Physicians, Philadelphia. The Trustees have made arrangements with Messrs. P. Blakiston, Son & Co., 1012 Walnut Street, Philadelphia, for the publication of the successful essay, which will also appear in the "Transactions of the College" for 1890.

JAMES H. HUTCHINSON,
JOHN ASHHURST, JR.,
JAMES V. INGHAM,
Trustees of the William F. Jenks Prize Fund.

THE FIRST FATAL CASE OF COCAINE POISONING reported in England occurred recently at the University College Hospital. A solution of twenty grains of cocaine in an ounce of water, intended to be used for washing out the bladder, was, by mistake, administered internally. Death took place in about one hour.

MYRTOL is a perfectly clear fluid, and represents that constituent of oil of myrrh which boils at 160° to 170° C. Linderm is the only clinician who has instituted any detailed trials with myrtol. Eichhorst himself was first to apply it in gangrene of the lungs. The results which he obtained were so surprisingly favorable that he has used the drug in numerous cases, and is now convinced that, as a disinfectant of the air-passages, myrtol has not its equal. The drug is best given in gelatine capsules (à .15, prepared in Paris, or by Pohl, of Schönbaum-Danzig). If a capsule is crushed, the peculiar odor clings to the room for a long time, and if a capsule is swallowed, the breath emanates the characteristic odor for many hours, and often for a couple of days. In putrid bronchitis and pneumonic gangrene two to three capsules should be

taken every two hours to deodorize and disinfect the parts. The effect is rapid, and a few capsules suffice to remove the bad odor, and often to produce a permanent improvement. The drug is, however, apt to cause a temporary loss of appetite. Myrtol has also been tried against tuberculosis, but the drug has proved utterly useless against the bacillus tuberculosis.—*Therapeutic Gazette.*

STROPHANTHUS.—Dr. Dujardin-Beaumetz speaks rather favorably of strophanthus, but he has obtained with *extract of oleander* results perfectly identical with those of strophanthus, the only difference being that larger doses of oleander are necessary.

ANTIPYRIN AND SWEET SPIRITS OF NITRE.—There has been much said about the incompatibility and danger, when mixed, of the above drugs. Dr. H. C. Wood (*Therapeutic Gazette*) has shown that when combined they may produce iso-nitroso antipyrin, a compound which is not toxic, but is not antipyretic.

AN ACROMEGALOUS GIANT was recently shown by Virchow before the Berlin Medical Society (*Therapeutic Gazette*). The patient was a very robust and large man, perfectly healthy, and father of six children. His lifting capacity, the reporter says, is truly enormous, for he lifts with ease and pleasure eight hundred pounds. The head of the man shows gigantic proportions, in all directions defying all his hitherto collected anthropological experience. The skull of the giant measures in circumference 65.5 ctm., 2 feet 1¾ inch, in length 22.9 ctm., and in width 16.8 ctm. These figures are far in excess of those taken from other gigantic individuals, such as Murphy and Winkelmeyer, the two well-known giants of Castan's Panopticum (in Berlin), and a Prussian guardsman. While the height of Murphy's body was 7.1, of Winkelmeyer 6.3, and of the guardsman 6.7 times the length of the foot, the comparative index in this instance was only 5.8. His absolute height is 183.8 ctm., or about 6 feet 1 inch.

A NEW METHOD OF ILLUMINATING INTERNAL ORGANS.—The well-known experiment for showing total reflection of light in a jet of water or in a glass rod has been made use of here by Dr. Roth and Professor Reuss in devising a new method of illuminating from outside some cavities of the body, such as the larynx and nose. The instrument used for this purpose is a well-polished (not blackened) glass rod, to one end of which a small electric incandescent glow-lamp, like those used for electric breast-pins, is attached. The light of the lamp is reflected equally through the whole glass rod to its other end, which is placed on the skin of the throat in the case of a laryngoscopical examination being required. Then the interior of the larynx becomes illuminated sufficiently for laryngoscopy. If this luminous glass rod is applied to the sclerotic, the interior of the eyeball can be examined in the same way as by using an ophthalmoscope, the structure of the posterior parts of the vitreous body being very well seen and studied. As the glass rod remains cold, it can be employed in operative surgery to light the natural and artificial cavities.—*The Lancet.*

THE MICROBE OF DIPHTHERIA has been repeatedly discovered and isolated, the best recent work in the bacteriology of the disease having been done by Loeffler, who worked under Koch. That observer did not find a single specific microbe, and we are, therefore, inclined to doubt the results announced by M. Roux, of the Pasteur Institute. He claims, however, in conjunction with M. Versin, to have isolated the specific microbe of diphtheria. The two observers have studied the conditions in which this microbe is developed, and have succeeded in reproducing diphtheritic infection in rabbits, pigeons, fowls, and guinea-pigs. Pushing their experiments further, they have also isolated the poison secreted by the microbe from which are derived all the asphyxic and paralytic symptoms of croup or diphtheria; and it is foreseen that the time is not far distant when prophylaxis by means of inoculation will be established. This discovery will certainly be a great boon, since diphtheria is one of the most cruel maladies which afflict humanity. In the note on this subject by M. Roux, the author further states that all the experiments on animals tend to prove that the microbe of diphtheria develops only on mucous membranes already diseased, and it is probable that this is most frequently the case in man. Hence diphtheria is particularly frequent after an attack of measles and scarlet fever. Hence also, a simple sore throat occurring in these maladies should never be neglected; frequent washings of the mouth and throat of children affected with these two diseases should be practised with solutions of carbolic acid. Even in confirmed diphtheria, carbolic acid seems to be the most efficacious antiseptic.

Obituary.

D. WILLARD BLISS, M.D.,

WASHINGTON, D. C.

DR. D. WILLARD BLISS, one of the physicians who attended President Garfield after he was shot, in July, 1881, died in Washington on February 21st. Dr. Bliss had been in bad health for several months, and two days before was stricken with paralysis, from cerebral hemorrhage. He was born at Auburn, N. Y., in 1825, and was graduated in 1846 by the Cleveland Medical College. He practised in several cities of Michigan.

At the breaking out of the rebellion Dr. Bliss became an army surgeon. In the fall of 1861 he was one of the medical officers selected for a commission by President Lincoln as Division Surgeon, and on the organization of the Army of the Potomac was attached to the staff of General Phil. Kearney, with whose division he served until after the battle of Seven Pines, when he was ordered to Washington and placed in charge of the church hospitals. Subsequently he was assigned to the management of Armory Square Hospital, the largest in Washington during the war. It covered fifty acres, and held at times from 12,000 to 15,000 soldier patients. In September, 1865, he resigned and began private practice in Washington, which he conducted until recently.

Although the treatment of President Garfield by Dr. Bliss was much criticised by the press, due no doubt to an unfortunate error in diagnosis, it must be remembered in all charity that there was a great deal of pressure brought to bear upon the medical staff for positive opinions and direct statements. Under the circumstances, however, a positive diagnosis as to the location of the ball was impossible, and the press gave itself the freest possible license for rebuke, criticism, and abuse. Happily, however, notwithstanding differences of opinion upon many points in the case, the distinguished patient did not suffer as to treatment, and it must in justice be said that Dr. Bliss did his best from every point of view.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNECOLOGY.

Stated Meeting, January 24, 1889.

J. E. JANVRIN, M.D., CHAIRMAN.

ELECTION OF OFFICERS.

DR. JANVRIN was re-elected Chairman, and DR. J. R. GOFFE Secretary, for the ensuing year.

SUBMUCOUS FIBROID OF THE UTERUS.

DR. R. G. WIENER presented a fibroid as large as a goose's egg, which he had removed the Sunday previous from the interior of the uterus of a woman who began having severe hemorrhage the day before. The vagina was tamponed overnight and the operation done the next day. He first attempted its removal by the wire écraseur, but as this broke two different times, he was obliged to complete the operation with the spoon-saw. The uterus contracted firmly, aiding in the expulsion of the tumor and preventing hemorrhage subsequently.

DR. J. R. GOFFE, who had witnessed the operation, remarked that it was surprising how easily the tumor came away after the spoon-saw was resorted to. No nemorrhage attended the operation, and there was none subsequently. The growth had protruded about half-way out of the cervix, and was attached to the anterior wall by a pedicle perhaps an inch and a half in breadth. From his slight experience with such cases he had found no other operation in gynecological practice give equally satisfactory results.

DR. W. GILL WYLIE said that the uterine fibroids belonging to the class of the one presented were easily and safely removable; it was necessary only to enucleate them from the thin capsule by which they were enveloped, twist them off, and usually no difficulty was experienced from hemorrhage or other untoward accident; but in the case of fibroids of a vascular type, which had no capsule, the operation of removal sometimes proved one of the most formidable in surgery. If the growth was deeply situated in the wall the operation might prove more dangerous than hysterectomy. It was not safe to take only a part away, for the remaining portion might suppurate and lead to poisoning.

DR. GOFFE remarked that he knew of one or two cases of the second class of fibroids referred to by Dr. Wylie in which death had followed their removal.

THE CHAIRMAN asked Dr. Wylie what he did with the capsule in cases of pedunculated hard submucous fibroids.

DR. WYLIE replied that it was very thin, and if it could be pulled down easily he tied some of it off, but if hot water was employed it was not likely to cause any trouble if allowed to remain. In reply to Dr. Wiener's question, what objection there was to the use of the wire écraseur, he said it was not very practical, and was liable to take away some of the uterine tissue.

DR. J. R. NILSEN then read a paper, entitled

SOME UNUSUAL COMPLICATIONS IN OPENING PELVIC ABSCESSES THROUGH THE VAGINA, OR BY LAPAROTOMY.

The paper was based on a case taken from his notebook for 1886. The patient had been married nine years, had borne one child, and had one miscarriage six years before he saw her, from which time she dated her trouble. Her symptoms were those of backache, aggravated menstruation with much loss of blood, leucorrhœa, headache, etc. There was a laceration of the perineum, considerable thickening about both broad ligaments, condition of the tubes uncertain. She responded well to treatment by hot douches, tampons, etc. In the fall, not having seen her for three weeks, he received an urgent call, and on his arrival found the abdomen swollen, considerable tympanites, no great tenderness, uterus forced over to the right side by a large mass filling the pelvis and extending back to the sacrum. The mass grew softer, she had chills, and three days after the first visit he discovered a soft spot behind the broad ligament and introduced the aspirator. A small amount of pus was withdrawn which had a bad odor. Several severe chills occurring again, he proceeded to aspirate a tumor in the back part of the pelvis. It had been his custom to draw the urine before aspirating; but as this patient had urinated just before he entered the room, he neglected this precaution. Feeling more fluctuation than the amount of fluid first withdrawn would account for, he drove the aspirator deeper into the tissues and drew off eight ounces of clear fluid, which proved to be urine. He was then reminded that she probably had congenital malposition of the bladder posteriorly, to one side, and back of the uterus.

Three days later his attention was called to a hard swelling over the spine of the pubis, above Poupart's ligament, which he poulticed twelve hours, after which it became softer. Before using the knife, however, he concluded, as he had done in some cases before with perfect result, to aspirate, first pushing up any coils of intestine that might lie over the abscess. The needle had to be pushed in deeply before fluid was reached. Ten ounces of offensive pus were brought away. The patient was turned over in bed and the cavity washed out a number of times. A similar procedure had established a cure in some other cases, but it failed in this one. He then concluded to use the knife, but did not feel at all sure that adhesions had been established to the abdominal wall. The peritoneum was found free and pushed before the tumor. It was incised and stitched to the external wound, and the abscess evacuated of pus. He would have established downward drainage but for the abnormal relation of the parts. The cavity was subsequently washed out through a drainage-tube.

Dr. Nilsen, in commenting upon this case, said that if he had followed the rule of emptying the bladder in pelvic surgery, except when its distention was regulated as a guide, it was very probable he should have pierced both walls, as they lay in contact in the misplaced position. The first small quantity of pus encountered by the needle might have come from a small abscess beneath the bladder, or from a sinus leading down from above. It was not unusual for patients of a nervous or hysterical nature to have retention or incontinence of urine. This one had failed to empty the bladder as she thought she had done.

A few years ago another patient had come to Dr. Nilsen's clinic, in whom the bladder was found entirely to the left of the median line. Within the past year he had seen another similar case. In the one case the malposition was congenital; perhaps it was so in the other. That the bladder could be very much dislocated by mechanical causes alone was shown in the case of a boy who had Hodgkin's disease. He passed urine, but it was found that a catheter of only very small calibre would enter the bladder, and the amount of urine withdrawn was enormous, showing that there had been paralysis of the organ and overflow. The catheter travelled ten inches before urine was reached, and the route was tortuous. At death an autopsy was not permitted.

Dr. Nilsen's results from the use of the aspirator, in cases of pelvic abscess, had been good. The employment of it anteriorly might not be considered at present good surgery; but it was his belief that, in the hands of general practitioners and timid operators, it was safer than the knife, and he had seen it result in permanent cure in a number of cases. He described his method of using the aspirator and washing out the abscess cavity, by which certain difficulties ordinarily met with were overcome.

The discussion on this paper was postponed until after DR. H. J. BOLDT had read a paper on

THE TREATMENT OF SUPPURATIVE ABSCESSES OF THE UTERINE APPENDAGES.

There had been much discussion recently regarding the propriety of operating in cases of disease of the uterine

appendages. It was true many women had been deprived of their appendages without being benefited, and some had found their condition worse than before the operation. But as some men had gone to the extreme in operating, others were going to the opposite extreme of non-interference.

The cases might be divided into three classes: (1) those in which the operation was altogether justifiable; (2) those in which the patient should be watched, kept under ordinary treatment to see what benefit could be derived therefrom, and afterward decide on the question of operation; (3) those cases in which delay was not only not advisable, but was dangerous. The histories of four interesting cases of the latter class were recited.

CASE I.—The patient had been married a number of years, and after a miscarriage had metritis and peritonitis. She was suffering from lumbar pains, cardiac palpitation, dyspnœa, etc. During the last five years she had had a number of attacks of localized peritonitis; there was menorrhagia, and she was suffering from the effects of syphilis contracted five years before of her husband. There was double pyosalpinx and ovaritis. Removal was advised if after a few months relief could not otherwise be obtained. During unusual exercise an attack of pelvic peritonitis was excited, followed by general peritonitis. Examination revealed, where formerly Dr. Boldt could map out definite fulness on each side of the uterus, only diffuse fulness. He concluded that the tubes which had been distended with pus had ruptured. The patient was removed to the hospital, but unfortunately he did not make up his mind to operate until the next day. His diagnosis was proven correct, both tubes had ruptured, which caused general purulent peritonitis. The patient did well the first thirty-six hours, but died of collapse sixty hours after the operation.

CASE II.—Unmarried woman, never pregnant, gave a history of salpingitis previous to her last illness. She was seized suddenly with pain in the lower part of the abdomen, but got along pretty well a few days, when high temperature developed with general peritonitis. There was fulness on the right side of the uterus, where the greatest pain was located, but thorough examination could not be made. He concluded, from the symptoms and past history, that septic peritonitis had developed from rupture of a pyosalpinx. The patient was removed to the hospital and operated upon. His diagnosis was verified. The abdominal cavity was cleansed, some hemorrhage took place, but the patient's condition was low; all bleeding points could not be searched for. A tampon of iodoform gauze was inserted into the pelvic cavity, which acted as hæmostatic and drain. After thirty-six hours it was removed and a hard rubber drainage-tube inserted in its place. The cavity was washed out through this, and all odor disappeared; but on the third day the washings became odorous and continued so until death, on the fifth day. The autopsy revealed diffuse nephritis as the only pathological lesion of consequence. The pelvis was perfectly clean, and nothing was found to account for the putrefactive smell which had existed in the return irrigation.

CASE III.—In this case the patient had marked symptoms, due to double pyosalpinx which had originated in puerperal endometritis. He was subsequently asked to see the patient as soon as possible. Severe pain had started in the right ovarian region during sexual intercourse. There was no evidence of general peritonitis. The former distinct outline of the enlarged right tube had disappeared. Diagnosis of rupture of the tube was made. He operated about two hours after seeing the patient, and found an opening two centimetres in length in the right tube, through which the pus had escaped. The other tube was yet distended. Both were removed. No drainage. The patient made an uninterrupted recovery.

CASE IV.—This patient also had double pyosalpinx of puerperal origin, the tubes being distended about five times their normal size. An operation was advised. July 27, 1887, the patient had an attack of severe pain, starting suddenly in the left ovarian region. Dr. Boldt saw her two hours later, but owing to the great pain and tympanites the diagnosis was not positive. Knowing her previous history, however, he strongly suspected rupture of one or both tubes, and operated about four hours later. One tube was found ruptured, and the other ruptured during the operation. The abdomen was cleansed of pus, and the patient made a good recovery.

In commenting on these cases Dr. Boldt said that in the first one he hesitated too long; the operation should have been done immediately after the diagnosis had been made. He had found no case on record in which recovery had taken place after rupture of a pyosalpinx without operation. He cited two other cases in which no operation was done. In one he diagnosticated double pyosalpinx of puerperal origin and advised an operation; but another physician whom the patient consulted ridiculed the idea, and assured her she would get better without an operation. He was called to see her subsequently, and suspected general peritonitis from rupture of the tubes. She died, and the autopsy showed the right tube ruptured. In the other case there was pyosalpinx commencing some months previously with a criminal abortion. Two other gentlemen saw the patient with him, and, under the circumstances, advised rest and awaiting results. The patient improved somewhat under Brandt's system of massage, yet Dr. Boldt felt that laparotomy should be performed. She afterward developed general peritonitis, but again improved. In spite, however, of her seeming excellent condition his prognosis was guarded, for during the former course of massage the tubes, instead of growing smaller, increased in size. Again she was seized with severe pain and a diagnosis of rupture of the tube was made, but rapid improvement took place. A consultation was held, and the consultants thought it possible, with the patient's improved condition, that the diagnosis of rupture was erroneous. But she soon afterward grew rapidly worse; the next morning it was too late to operate; death resulted. The autopsy showed rupture of the tube and purulent peritonitis.

Dr. Boldt said that at present he would in all cases unhesitatingly advise opening the abdomen and removing tubes which contained pus. If the diagnosis proved erroneous, no harm would result from having opened the abdomen. That diagnosis of pus in the tubes could often be made was proven by his own experience. He laid stress on the fact, however, that the suppurative disease should be in activity, which could be determined by the patient's symptoms. He protested against too prolonged waiting in doubtful cases, for if rupture should take place the chances of recovery from operation were greatly diminished. Having once opened the abdomen for suspected pyosalpinx, and finding hæmato- or hydrosalpinx, the operator should go on and remove the tubes, for they were almost invariably occluded. The patient could not become pregnant, and the symptoms, in patients who would submit to laparotomy, were such as to jeopardize their future happiness unless the condition giving rise to them were removed. One could determine, with more or less certainty, whether the distended tubes were permeable by gentle manipulation. If permeable, the fluid might escape and leave them of diminished size.

In the second case the patient was transferred a considerable distance to a hospital. To-day he would rather operate at her home, although it might be a tenement, and thus avoid delay and injury from the ride. He now considered it a mistake to put in the drainage tube after removal of the tampon and drain composed of iodoform gauze. He thought seriously of aspirating the tubes through the vagina in the last case, but this would be a doubtful procedure; it should not be undertaken unless the walls of the tubes were dense, to prevent escape of pus into the peritoneum, and to determine that fact would be very difficult.

DR. WYLIE thought the writer of the first paper made

a mistake in diagnosticating pelvic abscess as a disease, and not as merely a symptom. He had also spoken of the general practitioner treating these cases; but in Dr. Wylie's opinion no man should undertake to treat them unless a surgeon, and more or less expert. He would say without hesitation that the aspirator had done a great deal more harm than good in pelvic abscess. To speak of curing a case of pelvic abscess, as that condition was understood to-day, was using the term cure in a different sense from what he would employ it. Aspiration only relieved symptoms. He had, for five or six years, been trying to eradicate the former prevailing false impression of pelvic abscess. More than nine cases out of ten were cases of disease of the uterine appendages. Pelvic abscess usually was the result of neglected cases of that kind. If marked symptoms of sepsis had not developed, the only proper course was to open the abdomen. The mortality, when that procedure was resorted to, would not be greater than two per cent. If active sepsis were present, and the pus could be drawn by cannula and trocar inserted posteriorly to the uterus, that should be done, and the cavity be rendered aseptic. This procedure, however, would rarely prove a cure of the cause of the abscess, and subsequently it would be necessary to remove the appendages. But if there were danger in aspirating of wounding the bladder or intestines, the abdomen should be opened, always first in the median line, until the condition present was made perfectly clear.

Dr. Boldt's experience, as appeared from his second paper, went to confirm his views regarding the common origin of pelvic abscess.

Dr. P. F. Mundé thought the last speaker was unconsciously helping to perpetuate the mistake of confounding pelvic abscess and pyosalpinx. By pelvic abscess he understood the existence of an abscess in the cellular tissue of the pelvis, and that such cases did occur he did not doubt in the least. The two conditions differed etiologically, pathologically, and in line of treatment, and should not be spoken of in the same breath. Yet he would admit that many cases of pyosalpinx were formerly spoken of as pelvic abscess. He had already expressed his partial conversion to Dr. Wylie's views on this subject. As to diagnosis, in pelvic abscess and exudation the mass was quite immovable when grasped between the hands, one in the vagina and the other on the abdomen, and the uterus was also ordinarily fixed. But when the abscess was intra-peritoneal or in the tube, it was slightly movable up and down, and the uterus was also somewhat movable. In extra-peritoneal abscess the aspirator should be used and the pus withdrawn; if there was more than an ounce or two he would advise thorough dilatation of the opening and washing out the cavity and after-drainage. Soft rubber drains were difficult to retain even when made with a flange; consequently he had substituted a short hard rubber tube with a flange, with small perforations for the passage of a wire suture and fastening to the vagina; the soft tube could be passed through the shorter one for irrigation.

In three cases of extra-peritoneal abscess which pointed in the abdominal wall, he laid the abscess open above and made through drainage into the vagina, and had the accident happen of rupturing the bladder in passing the drain, not from puncture, but from force required in drawing the drain through a narrow opening. The wound in the bladder closed in each case without difficulty.

Regarding Dr. Boldt's paper, he agreed with him entirely respecting operation. He thought, also, an early operation might have saved the other patients. He would not aspirate, but remove a tube although its walls were thick, or in the condition which had been called pachysalpingitis. The question in Dr. Boldt's class of cases was not one of treatment, but of diagnosis. He knew the abdomen was sometimes opened when it should not, yet we sometimes failed to operate when we should. This was illustrated by a case in which the patient's sufferings led her to insist on an operation in spite of Dr. Mundé's protest that nothing wrong with the appendages could be felt. At the operation, however, pyosalpinx was found, and removal cured the patient.

Dr. A. P. Dudley had aspirated in two cases of pelvic abscess due to falls, and cured the patients. He certainly would not have been justified in opening the abdomen in those cases. Pelvic abscess and pyosalpinx were two quite different conditions, although it was sometimes convenient, when speaking to the patient, to use the term pelvic abscess indiscriminately, or as not indicating the exact location of the disease. Dr. Dudley criticised Dr. Boldt in saying that had the patient been in the hospital he would have operated any way. The wife of the millionaire and of the poor man should be treated alike, and both receive the advantage of an operation when called for.

Dr. Schmidt divided chronic suppurative salpingitis into two forms clinically, the mild and the severe, in the former of which the treatment should be tentative and palliative, while in the latter it should be by operation. Gentle massage toward the uterus might be of benefit in mild cases. He, at least, could not determine by examination whether tubal swelling was due to muscular hypertrophy or formation of new connective tissue in the walls. If due to muscular hypertrophy the case would be more favorable for conservative treatment, since the pus would be more likely to be eliminated by muscular power in the walls.

Dr. Dudley expressed, in the form of a question, doubt whether pyosalpinx could be cured by tampon and massage, owing to the position of the tubes relative to their opening into the uterus, and to adhesions.

Dr. Nilsen expressed appreciation of Dr. Wylie's teachings regarding the distinction between pelvic abscess and disease of the appendages, and the usual origin of the former. He still, however, thought those who had not opportunity to become accustomed to the knife should be warned of the difficulties and dangers they were likely to encounter, and not be led to employ it with careless haste.

Dr. Boldt repeated the fact that he did not operate for tubal disease unless it were in activity. He had never regretted operating but in two cases. Regarding Dr. Dudley's criticism, it should be remembered that hospital patients and those seen in private practice were often surrounded by quite different influences. With hospital patients one had only to gain their consent to carry out the treatment which his judgment told him was best. In private practice the patient's relatives and friends must give consent, consultants must be called in, and thus the operation might be delayed against one's own judgment. Dr. Boldt did not express faith in massage as a curative measure for any case of pyosalpinx, although in a few he had found the tubes permeable.

We do our own Singing.—At the suggestion of a mutual friend we wrote to a certain physician in Texas who had made some reputation as a medical writer, soliciting an occasional contribution to the clinical department of the journal. The doctor quite misunderstood us; and having a good opinion of his powers, suggested that he might be induced—*for a consideration*—to write the *editorials* for us if we wished it!!! We told him a little anecdote, by way of reply, as was the custom of the "late lamented" Abraham Lincoln, as follows: "Once upon a time, the choir of a certain village church was practising over night for services Sunday; a lean specimen of the genus 'tramp,' with a thin, piping voice, poked his head in at the window, and, in a shrill key asked: 'Do you want to hire anybody to sing bass at this church?' The basso, with a voice like distant thunder, rolled his eyes up at him, and in a tone that shook the rafters, said: 'Go-to-hell-Dod-dang-you-I-sing-bass-myself!!!'" That's all we said.—*Daniel's Texas Medical Journal.*

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

MR. CHRISTOPHER HEATH'S PRESIDENTIAL ADDRESS AT THE CLINICAL SOCIETY—SOME ADVANTAGES OF THE PRE-ANTISEPTIC ERA—HOW TO GUARD AGAINST SHOCK IN SURGICAL OPERATIONS—THE FIRST CASE OF NERVE-GRAFTING IN THIS COUNTRY—LEGAL PROCEEDINGS AGAINST THE MEDICAL COUNCIL—THE MEDICAL DEFENCE UNION—THE DEATH-RATE IN ENGLAND AND WALES—THE SOCIAL POSITION OF ENGLISH DOCTORS AND DENTISTS—DR. GOWERS' LETTSOMIAN LECTURES AT THE MEDICAL SOCIETY OF LONDON—THE PROGNOSIS IN THE VARIOUS SYPHILITIC LESIONS OF THE NERVOUS SYSTEM—SYPHILIS NOT A CURABLE DISEASE—A CAUTION AGAINST TOO PERSISTENT ADMINISTRATION OF IODIDE—CANCER OF THE LUNG AND BRONCHUS—THE DEADLOCK AT THE COLLEGE OF SURGEONS—IS APOMORPHINE A SAFE EMETIC GIVEN HYPODERMICALLY?

LONDON, February 2, 1889.

AT the last meeting of the Clinical Society the new President (Mr. Christopher Heath) took the chair for the first time and delivered a short address in which he touched on several surgical subjects of general interest. Referring to the fact that a few years ago the Committee of the Pathological Society appointed a committee to go through the published volumes of the "Transactions," extending over more than thirty years, with the object of ascertaining what cases there were which were incomplete, but in respect to which it was probable the authors could supply additional facts, he suggested that the Clinical Society might undertake a similar inquiry. Mr. Heath put in a plea for the value of clinical, as compared with pathological observation, and protested against the idea that the malignancy or otherwise of a tumor, so far at least as concerned the necessity for its prompt removal, could only be settled by microscopic examination. Clinical experience alone would guide the surgeon as to the cases he ought and ought not to interfere with. Of course it was very satisfactory when the microscope confirmed the diagnosis of a growth made before its removal, and yet how often did we find the after-history belie the prognosis of the microscopists, even when they agreed? Mr. Heath said that if a committee of hospital registrars were to undertake the work of collecting the cases of sarcoma and carcinoma which had passed through their respective hospitals during a period of ten years, following up each case to its termination, we should have a mass of material of the most valuable and reliable description. While ready to give credit to the antiseptic system, he was not sure whether recurrences after operations for cancer were not more rapid in these beautifully healed linear cicatrices than they were in the old days when profuse suppuration probably eliminated any particles of disease that had escaped the knife. He believed there was considerably increased risk to the patient in the exaggerated slowness of modern surgery. For a patient to breathe the vapor of ether or chloroform for over an hour was a serious matter for both heart and lungs, and when to that was added a steady drain of blood going on for an equal time, one could not be surprised at the production of deadly shock. He deprecated elaborate dissections of the living, and urged surgeons to use the left hand a little more. To guard against the shock of large operations on weakly patients he had for some years availed himself of a suggestion made by an American surgeon (whose name he had unfortunately forgotten), viz., to inject into the rectum with a long tube, half an hour before the operation, two ounces of brandy with four of hot water. This acted as a reserve of power which could be absorbed at leisure, and had the advantage over the administration of a stimulant by the mouth of not embarrassing the breathing. The injection could be repeated if necessary, and might be combined with the subcutaneous injection of ether. He also strongly advised the subcutaneous injection of from one-quarter to one-half a grain of morphia, combined with $\frac{1}{120}$ grain of atropine, before the patient left the table, as he believed that not only was pain thus relieved but sickness kept in check.

Mr. Mayo Robson, of Leeds, then showed a girl, aged fourteen, on whom he had successfully performed the operation of nerve-grafting. The patient had suffered for six years from a tumor of the median nerve. This had been removed, leaving a gap in the nerve, and on recovery from the anæsthetic the parts in the hand supplied by the median nerve were found devoid of sensation. Forty-eight hours later, two and one-half inches of the posterior tibial nerve, from a limb just amputated, was grafted into the gap. The ends were attached to the proximal and distal portions of the median nerve with a catgut suture, without tension either on the stitches or the nerve. The wound was well washed out with perchloride of mercury lotion and carefully sutured. Healing occurred by first intention. Thirty-six hours after the nerve had been grafted, sensation had so far returned in the parts supplied by the median that the touch of a pencil could be localized, and day by day sensation became more distinct. Five weeks after the operation the slightest touch could be localized, and though there was diminution in volume of the abductor and flexor brevis pollicis, they were not completely paralyzed. Return of function in the motor portion of the nerve was more gradual than in the sensory. Mr. Bryant asked whether the suture included the whole thickness of the nerve. Mr. Bowlby remarked that the case seemed likely to prove a successful one, but at present it was not entirely so. It was the first recorded case of nerve-grafting in this country, and the first case of primary grafting of a nerve—that was, within forty-eight hours of the injury. Mr. Bland Sutton observed that it did not follow that the piece of nerve grafted had become incorporated with the median nerve; it might act merely as a conductor. In experiments on animals it seemed that anything which acted as a conductor, so to speak, along which the reparative material passed—bits of chicken bone, catgut, etc.—had been found to answer the purpose. Mr. Christopher mentioned the case of a man from whom he had (in the course of an operation for removal of a tumor) accidentally removed a large piece of the external popliteal nerve, with consequent loss of sensation and muscular degeneration in the parts supplied by the nerve; some months afterward he had looked up the patient and found to his surprise that function had been restored. Mr. Mayo Robson, in reply, admitted that the case was not as yet an unqualified success. His answer to Mr. Bryant's inquiry was in the affirmative. He remarked that even if the piece of nerve grafted had not become incorporated with the median nerve, yet, in view of the successful issue, most persons would be inclined to commend the course adopted. Mr. Herbert Allingham then read a case in which he had successfully removed a dislocated internal semilunar cartilage from the knee-joint; and Mr. Bowlby narrated a case of complete dislocation of the elbow-joint, with laceration of the ulnar artery, in which recovery ensued and the joint was freely movable.

The Medical Council have of late displayed unusual activity and severity in dealing with offending members of the profession brought before them. One of the latter (Mr. H. A. Allbutt) whom the Council removed from the Register for "infamous conduct," has gone to the law courts to seek redress and compel the Council to restore his name to the Register. The judges, however, decided against him. The Council are now threatened with another similar action from Mr. Partridge, the advertising dentist, whom they removed from the Dental Register. Perhaps these legal proceedings, and the expense attendant upon them, may somewhat diminish the zeal of the Council in dealing with irregularities. Meanwhile, those

among us who are desirous of putting down unqualified practice may rejoice that the Medical Defence Union has been reconstituted. Mr. Lawson Tait has been selected as president. It is, I think, a matter for regret that of the two honorary secretaries one should be a gentleman reputed to have leanings toward homœopathy.

I must demur somewhat to two statements which have recently appeared in the columns of THE MEDICAL RECORD. One is a question of fact; the other is a matter of opinion, and therefore open to discussion. I will take the former first. In your issue for December 22d a paragraph is quoted from the Paris *Temps*, in which the writer refers to the mortality in England (presumably per thousand persons living) as 31. This is so wide of the fact that I am sure your readers will be glad to have the inaccuracy pointed out to them. In 1887 the death-rate for England and Wales was 18.8, and last year it was only 17.8. It does not reach 31 in our most unsanitary town.

The other point on which I would venture to protest is as to the quotation in your columns (January 5th) from a work entitled, "Good Form in England." There are doctors and doctors in England; but I think the social position of doctors generally has been somewhat underrated in the work you quote from. A medical man who reduces himself to the level of a tradesman by keeping an open surgery and selling drugs across the counter, must, of course, not expect to be received in good society. Even in country districts, however, many a general practitioner may enjoy a very good social position if he has the requisite manners, education, and means. It is scarcely correct to say "dentists have no social position in England." The dental profession has made great strides during the past few years, and in London many a dental surgeon will meet a hospital physician or surgeon on almost an equality. They are not "doctors" because we have no D.D.S., but at least one dentist is an M.D., and uses it. Oculists take the same position as general surgeons, and one (Sir William Bowman) has been made a baronet. Brook Street is only one of many streets where fashionable doctors live. Grosvenor Street is as medical, and Harley, Wimpole, and Welbeck Streets even more so.

LONDON, February 11, 1889.

IN Dr. Gowers' third and concluding Lettsomian lecture he discussed the subject of prognosis. It was not long, he said, since the diagnosis of syphilis as a cause, and the prospect of adequate treatment, were held to warrant an absolutely favorable prognosis in almost every form of disease. This view was still prevalent to some extent. Yet the facts suggested a very different conclusion. The scars on the skin told us unmistakably of imperfect tissue restoration, and that too often the proper elements of a part had perished, and their place was supplied only by cicatricial tissue. The fibrous nodule in the liver meant a loss of liver tissue perhaps many times the area of the scar, and so with other organs. When such a result occurred in the central nervous system, how could perfect restoration of function be expected? In the liver the effect in loss of function might be inappreciable, but in the nervous system each cell and fibre had its special use, and the loss of a few might have effects on function not only appreciable but conspicuous. In a large number of syphilitic lesions of the nervous system complete recovery of function did not, and could not, occur. Yet in many cases the symptoms passed away more or less entirely as the result of treatment. Between entire recovery on the one hand, and entire persistence of the symptoms on the other, we had every degree of partial recovery. Every prognosis must therefore be a matter of individual consideration, just as diagnosis must be. The prognosis depended on the diagnosis. If we realized the nature of the lesion and the fact that the symptoms depended, not on the specific process, but on the simple effects produced in the nerve-tissue, if we pictured to ourselves the changes that had taken place, and considered how long they had existed, we had only to ask ourselves how far it was likely that the mechanism of damage could be removed, and how far the nerve-elements could recover from the damage they had sustained. The lecturer said he would only consider the prognosis of the true specific lesions; those that were doubtfully specific, and those that were not specific in their characters, did not often respond to the special drugs. The two leading principles in prognosis were (1) the dependence of symptoms on the simple processes in the nerve-elements, and not on the specific part of the lesion; (2) the fact that it was the specific process only on which special treatment exerted a direct influence.

Our first conclusion must therefore be that treatment could never influence the symptoms directly. The simple processes that caused the symptoms were scarcely at all amenable to direct treatment, and not at all to the specific treatment. Hence the utmost we could do was to try and remove the specific process, and so allow the nerve-elements to recover if they could. Here, then, were the essential principles that must guide every prognosis. Was the specific process such, and in such a stage, that we could remove it wholly or partially? Was it to be expected that such removal of it as we could effect would be followed by the recovery of the damaged nerve-tissues sufficient in degree and extent to permit the return of function, complete or partial? The first question was as to how far the specific process could be influenced by treatment. The tissue-formation of syphilis was the element that could be influenced with most frequency, with most certainty, and in greatest degree. It could only be made to actually disappear in the early stage, while still soft; it might also disappear when it had caseated, though the removal of the degenerated particles was perhaps not directly due to our treatment. But when fibroid transformation had set in it was doubtful whether our treatment did more than the process. In the process of subacute and chronic inflammation the effect of treatment through the specific element was largely dependent upon the amount of new tissue formed, and upon the stage of development which it had reached. Inflammation caused also a direct damage to the nerve-elements, and this damage was proportioned to the acuteness of the inflammation; in really acute inflammation it was great, and seemed to constitute the chief effective elements of the process. In such acute inflammation we had no true specific features. Our treatment was only to bring the acute inflammatory process to an end, and, if this were effected speedily enough, there was nothing further for the special treatment to do. There was no new tissue to remove, and, when we had arrested the process of inflammation, all we could do was to wait while the nerve-structures recovered; and all we could do in prognosis was to endeavor to form an opinion as to whether they could recover or not. But when the inflammation was chronic or had lasted long, we had to consider also the tissue-formation, the extent to which its removal was possible, the effect it had produced on the nerve-elements, and the degree to which it was possible that they could recover. A secondary question of importance was the relation of the new tissue to the nerve-elements. When fibroid transformation had set in, treatment could not remove it or do more than hasten this cicatricial process. But this process involved contraction of fibres. If the new tissue merely compressed the structures from one side, this contraction was as effective as absorption in relieving the structures from damaging compression. But when the new tissue encircled the nerve-elements the compression was actually increased by the cicatricial contraction. Whenever there was reason to suppose that there was no new tissue which was about to undergo, or had already undergone, the process of fibroid transformation, and that this new tissue was so placed as to surround either the spinal cord, the nerve-roots, or nerve-fibres, our prognosis must be influenced by these considerations. In all inflammations that were not actually acute there was this

new tissue. If the inflammation had lasted for a few weeks before treatment had been effective, we could not assume that the new tissue would be removed. The amount of new tissue would be proportionate to the intensity, extent, and duration of the inflammation, and we had to consider how far the position of the tissue was likely to entail encircling compression. Hence our prognosis must be deferred till we saw what effect treatment had upon the symptoms.

The practical bearing of these facts upon the chief lesions was as follows: Syphilitic growths—gummata—could be removed more completely than any other lesion. When their influence was exerted by simple lateral pressure, the resulting damage to the nerve structure was recovered from in the most complete degree, and hence the prognosis in such cases was good, unless the duration of the damage was very long and its degree very great. When the growth infiltrated, however, the problem became similar to that met with in some inflammations. In all forms of meningitis the prognosis was good except so far as related to the damage to nerves and nerve-roots, which were surrounded by the newly formed tissue, and also the damage to the spinal cord when the dura matter was greatly thickened. In all these cases the effects of the inflammatory damage and of the early compression commonly lessened up to the point when the contraction of the tissues came into operation. But a residuum remained in some cases, and was increased in some of them, though further improvement was not uncommon. After a time some permanent effects might remain. The prognosis of syphilitic neuritis affecting the cranial nerves was chiefly influenced by the duration of the morbid process. If the inflammatory products were in such a stage that they could be removed, the prognosis was good if the damaged nerve-fibres would recover conducting power; but if there was reason to suspect cicatricial transformation of the new formation into fibroid tissue, it was improbable that the degree of improvement would be sufficient to permit severe symptoms to pass away entirely. The same general prognosis was also true of infiltrating growths. In true acute inflammation that was treated early and arrested early, the prognosis was the same as in similar non-specific inflammations. Symptoms of irritation formed a large part of the manifestations of many lesions. The irritation might be that of nerve-fibres, causing pain, or that of motor structures in the cortex of the brain, causing convulsions. The irritation of nerve-fibres was due to inflammation in the first instance, and, secondly, to residual compression. Convulsions from cortical irritation were usually ascribed to the presence of a cicatrix on the surface of the brain; but the facts were equally explicable on the assumption that the "discharges" originated from damaged nerve-cells, and that the discharging tendency was perpetuated by the residual influence of the discharges themselves. The convulsions might persist long after all other symptoms of cortical irritation had passed away, and they were absolutely uninfluenced by anti-syphilitic treatment. The lecturer then discussed the question of the curability of syphilis, and observed that experience seemed to authorize the belief that it was not curable. They might restrain and control its manifestations, but they could never affirm that the virus had been destroyed. He would not enter into the question as to whether or not the later symptoms were due to the direct action of the virus. He gave a caution against persisting too long in the use of iodide. It would probably effect all it could do in six or eight weeks, and if continued longer often appeared to lose its power. It could be resumed if necessary after an interval.

Among the topics brought forward for discussion at the last meeting of the Pathological Society was that of pulmonary carcinoma, in a paper by Dr. Handford. Within a year the author had had, in his own practice, three cases of cancer of the lung, all ending by profuse hæmoptysis. In two of these the tumor was very small, thus rendering the diagnosis difficult. The third case was that of a collier, aged sixty-four, who dated his illness from an injury to the chest received five months previously. He had copious frothy expectoration, occasionally streaked with blood. There were signs of collapse of the upper lobe of the left lung. For three days he brought up from twenty to thirty ounces of blood a day, and finally died from exhaustion. At the post-mortem the upper lobe of the left lung was found collapsed, and containing several nodules of new-growth. The mucous membrane of the trachea was affected, and the growth had spread along the left bronchus, nearly filling it, but without affecting the outside. There were secondary nodules in the liver. Microscopic examination showed all the nodules to be carcinomatous. Dr. Samuel West referred to some similar cases he had recorded, in which the only physical sign was obstruction of one bronchus. There was no hæmoptysis and no secondary growths. Dr. Ormerod related the case of an old man who died from what was thought to be pneumonia, but at the necropsy the bronchi were found encased in new-growth, the mucous membrane being intact.

There are no signs of any healing of the breach at the College of Surgeons between the members and Fellows on the one hand, and the Council of that institution on the other; rather does it continue to widen. The subject is one of interest to a very large number of our profession in this country. The members and Fellows of the College represent, practically, the entire profession in England and Wales. Almost every practitioner takes the M.R.C.S.—whatever other qualifications he may add to it—even if he is intending to practise purely as a consulting physician. Almost the only exceptions are the Scotch and Irish graduates who come and settle among us, and even some of them take it. The final result of the struggle is obvious to all, but its progress is nevertheless watched with interest.

Apomorphine is generally regarded as a safe emetic, even when old discolored solutions have been injected, though, of course, everyone would prefer a freshly made one. Some cases have, however, been recently published which seem to show that it may induce dangerous symptoms when employed hypodermically.

OUR PARIS LETTER.

(From our Own Correspondent.)

THE MICROBE OF CHOLERA—TABES DORSALIS.

PARIS, February 15, 1889.

AT a recent meeting of the Academy of Sciences M. Chauveau read his report on a communication made by Dr. Loewenthal, on researches on the microbe of cholera and its inoculation. M. Chauveau remarked that the presumed agent of cholera, the comma bacillus of Koch, may be cultivated in solid or liquid media. But these cultures are deprived of all pathogenic activity. To arouse this activity one must have recourse to such artifices that the results obtained are suspected of being of little or no value; and this is the principal obstacle to the experimental studies on the prophylaxis and the therapeutics of cholera. M. Chauveau affirms that the only experiments in which proof was furnished of the existence of a choleraic poison, issuing from the proliferation of the choleraic agent, are those of Professor Bouchard, made with the urine of human choleraic subjects introduced directly into the blood-vessels of animals. In conducting his experiments Dr. Loewenthal sought for a chemical agent capable of preventing the bacillary proliferation and the formation of the toxic agent in cultures, in preparations with the pancreas, from which the author was led to conclude that the pancreatic juice, in presence of albuminoid and peptonized matters, determined the toxogenic action of the bacillus. All the other substances combined together, with the exception of the pancreas, insured the development of the bacillus, but no toxic matter whatever was produced. He found that the

salicylate of phenol or salol produced the effect desired. The bacilli ingested, having passed the stomach, arrive in the intestines and there produce, with the aid of the pancreatic juice, the same toxic matter as that of the pancreatic preparation he had made. This matter is reabsorbed, and, according to the quantity and force of resistance of the organism, determines troubles more or less grave, even death. Salol being inoffensive, as Dr. Loewenthal proved on himself, he proposes to administer this substance as a prophylactic remedy, three times a day, at the principal repasts, in doses of two grammes each time. For the treatment of cholera itself, one must, at the manifestations of the first symptoms, have recourse to an initial dose of four grammes, and to doses of one gramme repeated every hour. Twenty grammes of salol may be taken per day. The above researches were conducted at Professor Cornil's laboratory, who reported on them at a recent meeting of the Academy of Medicine. He stated that, "in order to obtain conclusive results, one must be able to give the cholera to animals in a manner as simple and as sure as that we possess for the transmission of charbon, for instance, or of tuberculosis. We are far from this preliminary condition, and this is why the results have not, and cannot have, all the demonstrative force desired. Notwithstanding this, the results of the last experiments of Dr. Loewenthal are always of a nature to furnish one more indication for the trial of salol against cholera in man, and it is this test alone which will permit one to see whether the action of salol, which is certain in the laboratory, and very probable in the animal, will be confirmed or not in man."

Professor Charcot recently delivered a very interesting lecture at the Salpêtrière Asylum, on the treatment of tabes dorsalis, and of some other maladies of the nervous system by suspension. The procedure of the treatment by the suspension of patients suffering from these maladies had been experimented with in the wards of M. Charcot during the last three months of the year 1888. The idea is attributed to Dr. Motchoukowsky, physician to the hospital at Odessa. Notwithstanding a work that this physician had published in 1883, this subject was lost sight of. However, it was reported that twelve ataxic patients had been considerably improved by this means, which had equally re-established the sexual functions in some of the patients that were affected with impotence. This mode of treatment was imported into France by Dr. Raymond, Agrégé of the Faculty of Paris, who had gone to Russia on an official mission. The treatment consists in the suspension of the patient, and leaving him in this state, at first for one or two minutes, then during three or four minutes at the maximum. The duration of the suspension is thus progressive, and the séance is repeated every two days, as it has been found that a more frequent application does not give better results. The apparatus employed for the purpose very much resembles the suspension apparatus of Sayre, and it may be curious here to relate that the Russian doctor got his idea from the following circumstance: Wishing to apply a plaster corset to a tabetic patient affected with scoliosis, with the view of straightening the spine, he suspended the patient from under the arms by means of a Sayre apparatus. A few days after, the patient returned and expressed himself as being very much relieved of his sharp pains. At first the doctor was inclined to attribute the improvement to the application of the corset, but he soon perceived that the diminution of the pains was really due to the suspension. This led him to apply the method to a great many other tabetic patients, nearly all of whom experienced great relief by the treatment. The results thus obtained have been confirmed by the experiments performed at the Salpêtrière. Of fourteen patients who follow the treatment, there are eight in whom surprising results have been obtained; the six others have felt an improvement less marked. One of the effects, not the less curious, of the suspension is the amelioration, or even the disappearance, of impotence. The amelioration is also manifest in other medullary symptoms—the sensation of numbness, and the anæsthesia of the soles of the feet disappear. En revanche, no change in the rotulian reflexes and in the pupillary signs has been noticed in the patients of the Salpêtrière. Results equally considerable have been obtained by Dr. Blocq, who applied the method of treatment to a patient suffering from the malady of Friedreich—the sign of Romberg, the trembling, and the titubation were notably amended. In a patient suffering from sclerosis "en plaques" the employment of the suspension was less happy, as it produced a spasmodic paraplegia, which, however, was transitory.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 15 to February 23, 1889.

LAUDERDALE, J. V., Major and Surgeon. Granted leave of absence for one month, to take effect between March 1st and 15th. Par. 2, S. O. 9, Headquarters Department of Texas, San Antonio, February 15, 1889.

SHUFELDT, ROBERT W., Captain and Assistant Surgeon. By direction of the President will proceed to Fort Leavenworth, Kan., and report in person to Brigadier-General Wesley Merritt, President of the Army Retiring Board of that place, for re-examination by the board, and on the conclusion of his examination will return to this city. Par. 13, S. O. 40, A. G. O., Washington, D. C., February 16, 1889.

PILCHER, JAMES E., Captain and Assistant Surgeon. By direction of the Secretary of War will repair from Fort Wood, New York Harbor, to Philadelphia, Pa., on or about February 23, 1889, for the purpose of giving instruction to the hospital corps of the 1st Brigade National Guards of Pennsylvania. On completion of this duty will return to his proper station. Par. 1, S. O, 41, A. G. O., February 18, 1889.

HARRIS, HENRY S. T., First Lieutenant and Assistant Surgeon. Will proceed to Fort Davis, Tex., so as to arrive there on or before February 25th, and report to commanding officer thereof for temporary duty. Upon return of Surgeon Lauderdale from leave of absence, Assistant Surgeon Harris will return to the Post of San Antonio. Par. 3, S. O. 9, Headquarters Department of Texas, San Antonio, February 15, 1889.

Official List oy Changes in the Medical Corps of the Unitea States Navy for the week ending February 23, 1889.

RIXEY, P. M., Passed Assistant Surgeon. Promoted to Surgeon, November 27, 1888.

BRADILY, GEO. P., Surgeon. Ordered to hold himself in readiness for duty about March 1st to Mohican.

LUNG, GEO. A., Assistant Surgeon. Ordered to hold himself in readiness for duty about March 1st to Mohican.

PERCY, H. T., Passed Assistant Surgeon. Detached from Naval Hospital, Washington, and to the Coast Survey Steamer Patterson.

WHITING, ROBERT, Passed Assistant Surgeon. Detached from Coast Survey Steamer Patterson, and to proceed home and wait orders.

"THE QUICK AND THE DEAD."—We clip the following notice from a contemporary's account of the death of a physician: "We have to lament the death of Dr. S——, of C——, N. J. He died a martyr to duty; forgetful of self and his own sufferings. A loyal, Christian man, and physician. His practice is for sale. Address his widow, Mrs. E. J. S——, C——, N. J."

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending February 23, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	13	3
Scarlet fever	314	48
Cerebro-spinal meningitis	1	1
Measles	310	12
Diphtheria	178	63
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

SYPHILIS FROM A BLOW.—A writer in the *British Medical Journal* of November 24, 1888, reports the case of a man who came to him complaining of weakness, malaise, sweating on slight exertion, and not feeling up to his work. Nothing could be found at first to account for this condition, until it was noticed that his hand was bandaged. On examining this, there was found a perfectly circular sore, the size of a threepenny piece, with clean-cut edges, bright red, without discharge, and surrounded by a purple area of very well-marked induration. Suspecting a venereal inoculation, I questioned him closely, but he affirmed most positively that such could not be the case, as he had never "gone in the way" of it. A tonic mixture was ordered and a simple dressing applied to the sore. After a week or so, finding no improvement whatever, but that, on the contrary, he had now an enlarged, hard gland in the axilla, slight sore throat, and a few pimples about the scalp, the writer told him he had undoubtedly got syphilis in some way or another. It was a difficult matter to convince him of this; but, on a close cross-examination, it turned out that he had had a dispute with another man about three or four weeks before, and that this man, who was somewhat intoxicated, had angered his patient so much, that the latter had struck him a blow in the face with his left hand, scratching his knuckle in doing so by contact with the other's teeth. There was no other probable source of infection that could be made out. Large doses of potassium iodide were given, and in a week or so there was marked improvement in all the symptoms. In brief, he was soon well, thus confirming the diagnosis. Being curious to trace the origin of the infection, the author wrote to the surgeon of a distant mining settlement, to which his patient's antagonist had since gone, asking him to keep an eye upon the man, and report. After some weeks he received a reply to the effect that the man had turned up to consult him about well-marked secondary and tertiary symptoms of syphilis, contracted, as he admitted, two years before, and for which he had been under treatment by a medical man, with pills, which, however, he had discontinued, as it was "too much trouble" to go on taking them. This, of course, cleared up the mystery beyond all doubt.

MUSIC IN MEDICINE.—From the time when medical knowledge was first embodied in rules of practice, and probably from a much earlier period, music has held a recognized place in the treatment of disease. Though lauded in connection with the most diverse maladies—for example, with gout and insanity—it has for obvious reasons been chiefly effective in dealing with certain forms of nervous disease. This is only what one would expect from its natural action. It cannot be named along with many drugs in point of apparent accuracy of result. Its place is not in any ordinary catalogue or pharmacopœia. It belongs rather to that group of natural recreative forces which are active in every healthy life, and which operate against the morbid weakness of any part by increasing the vigor of the whole. In so far as it affects the body, it must clearly do so only through the mind and the nervous system. This accounts for its known value in the treatment of mental disorders. Nor can its obscurer action in different physical states be otherwise explained. By acting as a refreshing mental stimulant and restorative it braces the depressed nervous tone, and indirectly that of the other tissues. Thus there is something to be said for the old custom of exorcising pestilences by the sounds of music. Calmed and inspired by harmony, the tonic energies of will and nerve combine to oppose a wholesome bodily tone to the invading scourge, and to prevent that tissue laxity which has often provided the nidus of disease. A similar process is relied on by those who turn to music, among other diversions, for some relief from the pain of atonic neuralgia. In no class of diseases, however, are we likely to derive so much benefit from the use of so pleasant a remedy as in those affecting the mind itself. In melancholia and allied states of depression its value is generally admitted in our own day. Ancient practitioners were also cognizant of its usefulness in this respect. We must all have felt how suitable is its infinite variety and facility of expression to the changing moods of the sane, and it is, therefore, the less difficult to understand how straying minds are pleased and settled by its charm. Certain it is that its beneficial effect is in this case considerable, and our readers, though possibly unable to acquire a knowledge of the art, should at least possess, and if needful assert in practice, a sense of its therapeutic value.—*The Lancet.*

JOHN ABERNETHY.—In the "Life of Sir Robert Christison, Bart.," is the following sketch of Abernethy, noted down when Christison was a student at St. Bartholomew's Hospital: "Abernethy, a very little man, but in figure and countenance uncommonly handsome, had not strength enough to become a great operator. The diagnosis and constitutional treatment of surgical diseases were his favorite field of practice, and in these branches of consulting practice he was at this time *facile princeps* among London surgeons. He was an early cultivator of what is now aptly called 'conservative surgery.' But I do not remember that term as in use at the period in question; and the surgical tendency was to fly too precipitately to the knife and saw. That never was Abernethy's fault. He was a good operator when driven to operate, but he disliked it. Cullen, who was his anatomical assistant, told me he had seen him in his retiring-room, after a severe operation, with the big tears in his eyes, lamenting the possible failure of what he had just been compelled to do by dire necessity and surgical rule. His *ratio medendi* was very simple. In all surgical diseases the digestive organs are apt to get out of order—the stomach and the bowels and the liver—but the liver at the root of all. Without sound digestion there cannot be healthy nutrition, or, without that, vigorous surgical reparation. Therefore the liver must be stimulated by alternate doses of calomel and blue pill, the stomach by some bitter infusion, and the bowels by a gentle saline aperient. This treatment, combined with a rigorous dietary, was found to suit excellently many London dyspeptics who had no surgical complaints; and, consequently, Abernethy's consulting-room soon became that of a physician much more than of a surgeon."—*British Medical Journal*, December 1, 1888.

LEPROSY IN RUSSIA.—Leprosy seems to be becoming more frequent in Russia, several distinct foci of infection existing in different parts of the Empire. Between 1877 and 1888, forty-nine cases of leprosy were treated in the hospitals at St. Petersburg, half the patients being natives of the city. Of the remainder, some came from the infected districts in the Baltic provinces, Kars, and Astrakan, but others were from Kowno, Vitebsk, and Twer, districts which have hitherto been free from the malady.—*Medical Press.*

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Original Lectures.

ACUTE PANCREATITIS.

A CONSIDERATION OF PANCREATIC HEMORRHAGE, HEMORRHAGIC, SUPPURATIVE, AND GANGRENOUS PANCREATITIS, AND OF DISSEMINATED FAT-NECROSIS.*

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(Continued from page 231.)

PART II.—*Continued.*

GANGRENOUS PANCREATITIS.—But the subject of acute pancreatitis deserves attention from another event, viz., its possible termination in gangrene.

The earlier medical writings contain occasional references to gangrene of the pancreas, but the evidence presented is so slightly objective as to make them of but little value for present needs.

Grisellius,[78] for instance, has been generally considered to have first called attention to this matter.

His patient, a man forty-two years of age, suffered from frequent colic, which was easily relieved. He was suddenly, without cause, seized with a chill and severe colic, and died quietly in the course of eighteen or nineteen hours. The post-mortem examination showed an extreme quantity of abdominal fat. The pancreas was found sphacelated, in a large mass of fat. "In whose absence nature had supplied another like round mass, on the right toward the liver and attached to the sphacelated part. Veins ran through the middle, like Wirsungian ducts, but without order. This sphacelated pancreas distributed a like contagion, penetrating not only adjacent parts, but even the diaphragm, consuming the left lobe of the lung as in phthisis."

The liver is said to have resembled grumous blood, in color and in substance. There were several calculi in the gall-bladder.

"Other membranes were adherent at the bottom of the gall-bladder and held another stone larger than all."

Although the evidence does not permit an exact diagnosis to be made it would seem as if the sufferings and death of this individual were rather attributable to biliary calculi than to pancreatic disease. The penetration of the diaphragm and the consumption of the left lung suggest that post-mortem softening of the stomach may have aided in producing the described appearances. The clinical history, brief as it is, affords quite a different picture from that to be presented as connected with pancreatic gangrene.

Bonetus[79] credits Barbette with stating that in a case of obstinate vomiting the pancreas was found wholly putrid, rather sphacelated. Again,[80] he refers to the statement of Verzaschka that Glaserus found a semi-putrid pancreas in a case of dropsy.

Bonetus himself[81] records a case of dropsy in a boy in whom the pancreas is stated to have been semi-putrid.

In Lieutaud[82] there is extracted the case of a woman with obstinate vomiting, severe renal symptoms, and pubic pain, in which the pancreas was semi-putrid, almost destroyed.

Also[83] that of a girl with swollen abdomen, hypogastric pain, purulent urine, and diarrhœa. The omentum and a large part of the mesentery were rotten. The liver filled almost the entire abdominal cavity. The pancreas was putrid and the whole left kidney purulent.

Again,[84] in an infant, with dropsy, there was found a putrid omentum and pancreas. He reports[85] that Helvigius found a sphacelated pancreas, omentum and mesentery, also a shrivelled and putrescent liver, with a gall-bladder containing more than a hundred calculi, in a man sixty years of age, who was seized with gastric pain, obstruction of the liver, and dyspnœa; there was black jaundice and œdema of the legs.

He also[86] refers to a case of extreme dilatation of the bile-duct, where the head of the pancreas was swollen, dense, scirrhous, and pressed upon the opening of the cystic duct. The left portion of the pancreas was putrid. Finally, he credits[87] Bonetus with reporting a case of oft-recurring, obstinate tertian fever, in which the pancreas and mesentery were found somewhat corrupted and sanious.

Schmidtmann[88] speaks of finding induration of the pancreas with appearances of inflammation and beginning gangrene in a case of chronic suppurative nephritis with destruction of the bladder.

The case reported by Portal[89] is perhaps the first which demands recognition as illustrating the relation of pancreatic gangrene to hemorrhagic pancreatitis. He writes as follows:

"Gangrene of the pancreas is the frequent result of inflammation. I have found it in several corpses, and especially in that of a merchant of St. Denis Street, who, during a period of more than two years, suffered from severe attacks of colic. They were deep-seated, below the navel, and were often preceded or followed by nausea or vomiting. There was neither swelling nor induration of the lower abdomen; no dryness of the tongue nor thirst. He became much emaciated, the pains increased, the pulse quickened, the heat of the skin became acrid and very strong. The slightest touch of the lower abdomen became very painful. The urine was scanty and red. This state lasted some twenty days, when the patient died unexpectedly. I was present at the autopsy.

"The pancreas was violet-red and soft, a black moisture escaped from its surface, it was almost wholly gangrenous. The stomach and the duodenum appeared inflamed in places."

Although the above case is probably one of the disease now under consideration, the lack of detail in the clinical statement and account of the anatomical appearances makes its value rather historical than useful in determining the relations of the hemorrhage to the gangrenous affections of the pancreas.

Gendrin[90] reports a case which is likely to belong to the series, but which is deprived of a considerable part of its possible value by the lack of sufficient details, clinical as well as anatomical. He states: "We have seen a vast cavity in the region of the pancreas communicating with

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* The Middleton Goldsmith Lecture for 1889, delivered before the New York Pathological Society, February 16, 1889.

[78] Misc. cur. Med. phys. Acad., etc., 1681, Ann., iii., 65.
[79] Sepulchretum, 1700, lib. iii., sect. viii., obs. 54, vol. ii., 113.
[80] Op. cit., ii., lib. iii., 478. [81] Op. cit., ii., liv. iii., 415.
[82] Op. cit., i., 34.
[83] Op. cit., i., 62. [84] Op. cit., i., 64. [85] Op. cit., i., 183.
[86] Op. cit., i., 236. [87] Op. cit., i., 246.
[88] Hufelaud's Journ. d. pr. Arzneykde, 1799, vii., 4te St. 16.
[89] Anat. Med., 1803, v., 353.
[90] Hist. anat. des Inflam., 1826, ii., 239.

the jejunum, which was perforated an inch from its origin. The pancreatic tissue was lost in a dense, friable, reddish mass which formed the wall of the cavity, which was filled with a grayish, very fetid pus. The surrounding cellular tissue and the intestinal walls united in forming this suppurating tumor."

The following table of fifteen cases of pancreatic gangrene represent all, with the above possible exceptions, I have been able to collect. Twelve of them have been observed in the past eight years, five of them have occurred in Boston or its vicinity, and three of them are now published for the first time.

The records of the Boston City Hospital give the following details concerning Case LXVI.: The patient, married, forty years of age, with abundant fat-tissue, strained herself two years before her death, while lifting a heavy tub. There were immediate umbilical pain and swelling, but she was not compelled to give up work.

Fifteen Cases of Gangrenous Pancreatitis.

No.	Authority.	Sex.	Age.	Antecedents.	Symptoms.	Lesions.
LVI.....	Haller and Klob: Zeitschr. d. k.k. Ges. d. Aerzte zu Wien., 1859, xv., 577.	M.	63	Always well.....	For 16 days gastric disturbance, vomiting. Now pale, cachectic, thin; yellow, bitter vomit. Epigastrium somewhat distended, tense, tympanitic, sensitive. Abdomen elsewhere moderately swollen. In the evening repeated nausea, vomiting, great prostration, collapse, violent epigastric pain, thence extending over whole abdomen. Traces of blood in vomit. No albuminuria. Death, after rapid collapse, on the 18th day.	The pancreas a thin, flabby, friable, grayish band soaked in fluid. It lay in an ichorous cavity, bounded by the posterior wall of the stomach, spine, spleen, and duodenum, and communicating with the stomach by three openings in its posterior wall. The pancreas was united in front by a few shreds to the omental bursa. Its cells were either disintegrated, or swollen, or opaque. Certain lobules were separated from each other, in part collapsed, with intervening molecules and fat-drops. Pus-cells were present. Splenic vein obstructed by a dark-red thrombus extending to the portal vein.
LVII.....	Trafoyer, 1862: v. Chiari, Wiener Med. Woch., 1880, xxx., 139, 164.	M.	52	Digestive disturbances for 2 months, with decided emaciation.	Sudden, severe colic. After several days a diagnosis of gall-stones by Oppolzer. The attacks were repeated for 3 or 4 weeks, when 18 gall-stones were discharged. Three days later another intense attack, with vomiting; prognosis grave. On the following day a slough discharged from the bowels. Recovery in 3 weeks, and the patient well 17 years later.	Rokitansky examined the slough and recognized it as the sequestrated pancreas.
LVIII.....	Chiari: Wiener Med. Woch., 1876, xxvi., 291.	F.	54	Corpulent, alcoholic. For several years gastric pains and occasional vomiting after meals. Irregular defecation. Stools often black. A few attacks of jaundice.	Violent pains in region of stomach. Slight jaundice and fever. Swollen abdomen, painful epigastrium, nothing abnormal on palpation or percussion. Bedsore in the course of three weeks. Acute parotitis in the 4th week. In the last weeks failing appetite, increasing debility. Death after a short agony, the illness lasting 7 weeks.	Pancreas cylindrical, brownish-black, shreddy, and friable. It lay in the omental cavity, which formed a spacious pus-cavity, the walls densely fibrous with purulent infiltrations of the innermost layers. The liquid contents an offensive black fluid. A round ulcer of the stomach opened into the cavity; there was also a second opening between the two, and five openings into the jejunum. There was a thrombus in the splenic vein, and necrosis of fat-tissue.
LIX.....	Chiari: Wiener Med. Woch., 1880, xxx., 142.	M.	38	Biliary colic a year ago...	Slight, nocturnal, abdominal pain for 10 days, not interfering with occupation. It then became more severe with sensation of twisting in left gastric region. On the 14th day suddenly awoke with persistent vomiting, followed by a dejection. Violent, gastric colic. Soon anxiety, collapse, the epigastrium swollen, tense, sensitive. For a few days signs of intestinal obstruction, the abdomen swollen, the epigastrium sensitive. No fever. After repeated enemata an offensive stool and improvement. At the end of a fortnight a sudden febrile attack, lasting 3 days, with symptoms of stenosis. After a fortnight a slough was discharged from the bowels. Recovery in five weeks, the entire illness lasting some 12 weeks.	The slough proved to be the larger part of a gangrenous pancreas.
LX.....	Chiari: Loc. cit., 139..	F.	46	Strongly built, abundant fat-tissue; often suffered from cramps of the stomach.	Severe abdominal pains for some days, frequent vomit. Signs of a general peritonitis. Slight jaundice. After a chill, copious, black, offensive vomit, which continued till death. Duration of disease some three weeks.	Pancreas dark-brown, friable, lying, attached only by a few rotten, fibrous threads, in the omental cavity. The latter contained also abundant ichorous, bloody fluid, and communicated with the duodenum and transverse meso-colon. Purulent infiltrations of the mesentery. Necrosis of fat-tissue. Numerous calculi in the gall-bladder. General peritonitis. The microscope showed merely remains of the pancreatic acini, but no evidence of hemorrhage.
LXI.....	Israel: Virchow's Arch., 1881, lxxxiii., 184.	F.	27	Typical case of diabetes. A year in the hospital, under treatment.	No particulars given.....	Head of the pancreas, not abnormal, formed the right pole of an ovoid cyst, the wall of which arises immediately from the thickened and fibrous capsule, which is intimately connected with the posterior wall of the stomach and with a small part of the colon. The contents are 300 grammes of opaque fluid surrounding the tail of the pancreas, the tip floating free. The pancreas, thus situated, is flabby, macerated, and impregnated with large hæmatoidin crystals and acicular, orange crystals.
LXII.....	Whitney: Boston Med. and Surg. Jour., 1881, cv., 593.	F.	Adult.	Well till within four months. In this time has had discomfort at the pit of the stomach, and debility, but is able to be about.	Sudden, severe, epigastric pain, with vomiting of a copious, dark-green, viscid fluid. Frequent stools resembling the vomit. Patient sleepless, temperature normal. Death in 5 days.	Pancreas large, firmly adherent to adjacent parts, which were infiltrated with a discolored purulent fluid. The entire gland transformed into a dark, slate-colored, stinking mass, to within 3 ctm. of its attachment to the intestine, where it was sharply defined from the remaining more normal portion. Splenic vein contained a soft, dark thrombus, where it was in contact with the pancreas.
LXIII.....	Rosenbach: Cblatt. f. Chirurgie, 1882, ix., Beil., 66.	F.	57	....	Eight weeks ago, violent pains, without obvious cause, constipation, speedy improvement; 3 weeks ago, constipation again; for 3 days no dejection, now, frequent green vomit, great prostration, marked swelling of left half of abdomen. Behind and below the dilated stomach a fluctuating tumor, immovable, size of a child's head. Laparotomy. Death in collapse after 6 hours.	Pancreas necrotic, from which arose the suspected cyst, which was an abscess between the stomach and small omentum. The contents were an opaque, stinking fluid. There was fecal accumulation from pressure of the cyst upon the upper part of the small intestines, which were adherent to it.

Fifteen Cases of Gangrenous Pancreatitis—Continued.

No.	Authority.	Sex.	Age.	Antecedents.	Symptoms.	Lesions.
LXIV.....	Balser: Virchow's Arch., 1882, xc., 523.	F.	32	Strong, abundant fat-tissue.	Four weeks ago, sudden vomit, at first slimy, then bloody and greenish. Soon violent pains in the loins and back, fever, headache. Scanty, high-colored urine. Abdomen then began to swell. Now no fever, irregular pulse, clear intelligence, dyspnœa, abdominal pain, debility, abundant stools, albuminuria. For a few days temperature from 100° F. to 102° F., rarely normal and subnormal. Great abdominal distention, flanks dull. Five days later sudden death, preceded by increased dyspnœa.	Pancreas, often appearing as if macerated, lay free, with the exception of its duodenal attachment, in a cavity holding about a litre, which was exposed by separating the fibrous and fibrinous adhesions of the root of the mesentery to the transverse mesocolon. It lay on both sides of the spine, extending to the pelvis, behind the cæcum and descending colon, and, in places, separated the muscles, which were covered with shreds. The contents were a greasy, grayish yellow detritus, mixed with larger fragments, some nearly as large as a hen's egg. These appeared to have been shelled out of cavities the walls of which were in part of an iron-rust color, in part dark brown, in part infiltrated with blood. The wall surrounding this necrosed fat was opaque, grayish-yellow or yellowish-white, narrow, and sharply defined, without purulent infiltration. The mesentery contained numerous large and small opaque-white patches, with, here and there, rust-colored edges. These had a centre of necrotic fat-tissue. There was recent pleurisy, a fatty heart, thrombosis of the left femoral vein, and embolism of the pulmonary artery.
LXV.....	Prince and Gannett: Boston Med. and Surg. Jour., 1882, cvii., 28.	M.	22	Strong, abundant fat-tissue. A week ago, immediately after turning a handspring, felt a sharp pain in the lower abdomen.	In the night, sudden, severe cramp of stomach, vomiting, chills, and sweating. A few hours later, collapsed, anxious, restless. Severe abdominal cramps, circumscribed tenderness near navel. Temperature normal. On the following day fever and diarrhœa. After temporary improvement, lasting a week, there was persistent diarrhœa, pains, and tenderness of the navel, slight fever and considerable tympany just before death, on the 15th day.	Site of the pancreas occupied by a black, shreddy, sloughy, soft, gangrenous mass; these characteristics most marked in the central region of the organ. The head and tail were represented by a central portion of a black, sloughy mass in which no trace of gland-structure was to be made out, which was incapsulated by the external portion. On raising transverse colon a ragged, blackish mass appeared from a rent, in which flowed a large quantity of thin, chocolate-colored fluid, also two or three soft clots, size of an egg. No cardiac source of embolism. Acute peritonitis.
LXVI.....	Homans and Gannett: Boston City Hospital, MS. Records, 1883, v.	F.	40	Umbilical hernia for two years. Irreducible for two weeks, with pain and swelling. Abundant fat-tissue.	On the day after entering hospital, for treatment of hernia, vomited breakfast, severe paroxysms of colic, small, flickering pulse. Nausea and bilious vomiting persisted on the next day, the face became anxious and pinched, the pulse 100, at times indistinguishable, the temperature normal. The pulse became 140, T., 100.8° F., and she became pale, comatose, and gasping, and died on the 4th day.	Hemorrhagic infiltration, and gangrene of the pancreas. Circumscribed peritonitis, gangrenous phrenitis. Acute pleurisy and pericarditis. Thrombosis of the splenic vein.
LXVII.....	Whittier and Fitz: Mass. Genl. Hospital, MS. Records, 1884., v.	M.	49	In past three years, three attacks of jaundice, bilious vomit, severe pains and abdominal tenderness, most marked near xiphoid cartilage.	After dinner burning in stomach, nausea, much abdominal pain. On the following day jaundice, bilious vomiting. The latter persisted for several days, with frequent belching and loose dejections. The abdomen became resonant except in the right flank, generally tender; temperature on the 8th day, 100.8° F. Pulse and respiration rapid. On the tenth day he fell to the floor while trying to leave the bed, and soon died comatose.	Hemorrhagic infiltration necrosis, and sequestration of the pancreas, and multiple, disseminated necrosis of the subperitoneal fat-tissue.
LXVIII....	Mader: Ber. d. k.k. Krankenaust. Rud-Stift in Wien, 1884.	M.	42	For four years repeated attacks of vomiting, without colic, followed by jaundice lasting four or five days.	During first 5 days paroxysms of abdominal pain, swelling of abdomen, vomiting, jaundice, 2 to 3 daily chills, fever; on the 6th day, T., 100.4° F. Some green vomit. Pulse hardly quickened, no albuminuria. Abdomen inordinately distended and resistant, very sensitive, dense, and dull in left upper quadrant. Sudden collapse on the 9th day. Death on the 13th day.	Tail and part of the body of the pancreas very soft, gray, discolored, infiltrated with a thin, ichorous fluid; the peripancreatic tissue partly purulent, partly ichorous. Spleen greatly enlarged, soft; splenic vein contains a soft, partly puriform thrombus, extending to portal vein. Acute lepto-meningitis.
LXIX.....	Gerhardi: Virchow's Arch., 1886, cvi., 310.	M.	36	Powerful frame, abundant fat. In habit of drinking. From early youth attacks of abdominal pain, without constipation. A year ago the attacks became more frequent.	After a hard day's work intense pain in mid-abdomen. In the course of three days no dejection. T., 100.4° F. Slight jaundice then appeared. There was a feeling of abdominal tension, although the abdomen was tympanitic and not remarkably distended. The nausea became lessened, the jaundice increased, the abdomen more distended, there was no excess of indican in the urine. On the 7th day the abdomen tended to retract except in the left upper part, where it was very sensitive. Laparotomy. The abdominal pain remained severe after the operation; there was no stool; and death, preceded by collapse, took place on the tenth day.	Pancreas dense, nodular, with hemorrhagic coating, acini dull, yellowish-gray. Dry, hemorrhagic masses with yellow spots of softening. In the head is fatty softening, and a hemorrhagic infiltration extending into the surrounding tissue. At the back of the pancreas a narrow line of hemorrhagic and necrotic tissue; beneath it the duct, with necrotic wall. Left kidney and supra-renal capsule showed extensive subperitoneal hemorrhage. The microscopic examination of the pancreas showed necrosis of the fat-tissue with hemorrhagic processes in the tissue surrounding the fat-lobules.
LXX.....	Foster and Fitz: MS. Notes, 1887.	M.	59	Weight, 200 lbs. Strong and healthy. Two weeks ago thrown from carriage, but did not consider himself injured.	The attack began with intense pain in the left abdomen, without fever, apparent improvement for 3 days, then labored and jerking breathing, rapid, extreme exhaustion, and death in ten days after the onset of the pain.	The pancreas and mesentery showed a gangrenous parapancreatitis, and necrosis of the mesenteric fat-tissue.

Until two weeks before she entered the hospital she was able to replace the umbilical hernia. Since then the swelling and pain have increased.

On the day following her admission as patient she vomited after breakfast, and was seized with a severe paroxysm of colic. The pulse became small and flickering. On the following day there were nausea and bilious vomiting, the pulse remained very weak, at times not perceptible, and the face was pinched and anxious. The temperature was not elevated. On the third day the vomiting had ceased, but the face was flushed; the temperature, 100.8° F.; and the pulse, 144. She became comatose the next day and died. Pallor, gasping respiration, a temperature of 100.8° F., and a pulse of 124 were recorded. The coils of intestine in the immediate vicinity of the pancreas were united together, and to the diaphragm, by recent fibrinous adhesions. On removing these the pancreas was found to be doubled in size, of a dark-red color, and of a somewhat diminished density. On section, the tail was of a nearly uniform red color, soft, and its

tip was shreddy. The duodenal portion was of normal density and of a mottled red and gray color.

The splenic vein was filled with a reddish thrombus, in places softened at the centre. The under-surface of the diaphragm presented a dirty grayish-white, shreddy appearance. A section through the diaphragm showed it to be four times as thick as usual, and to contain numerous small collections of dirty-gray, puriform fluid. The diaphragmatic tissue was quite shreddy. There was an acute fibrinous pericarditis and a sero-fibrinous pleurisy. The umbilical hernia was omental and adherent.

Case LXVII. has the following record: The patient was an Irish laborer, forty-nine years of age; abundant fat-tissue.

In the past three years he has had three attacks of jaundice, with bilious vomiting, severe pain and tenderness over the xiphoid cartilage. He has suffered also from severe paroxysms of abdominal pain, and had been told by a physician during the past winter that he had passed a gall-stone.

After dinner he suffered from a burning sensation in the stomach, followed by nausea and severe abdominal pain, not paroxysmal but increased on motion. He became jaundiced on the next day and vomited a dark-green fluid, and considerable mucus. For the subsequent three days the vomiting persisted, and there were frequent gaseous and bitter eructations, also several loose, dark-green dejections.

He entered the hospital on the fifth day. The jaundice was conspicuous; the abdomen was resonant, except in the right flank, and sensitive. The pulse was 100, and the temperature rose abruptly from 97.4° F. to 100.8° F. During the subsequent four days the diarrhœa persisted. The urine contained a trace of albumen and a variety of casts. The pulse varied from 120 to 150, the respirations were very rapid, and the temperature remained moderately elevated.

On the eighth day he dressed himself, but did not seem conscious of his actions. He became mildly delirious on the following day, and while trying to escape from the ward fell forward, was temporarily unconscious, and his pulse could not be counted. The temperature became subnormal, but rose to 100° F. in the evening. On the tenth day, while trying to leave the bed, he fell to the floor, his pulse became weaker and more rapid, his breathing resembled the Cheyne-Stokes rhythm, and he died comatose.

The posterior wall of the stomach and the upper part of the mesentery were united by fibrinous adhesions to the pancreas, which lay in a cavity, within a spongy meshwork, infiltrated with dirty-green fluid. The pancreas was dark brown, dry, and firm. On section the lobules were indistinct, and the surface granular. Numerous opaque-white patches were seen, resembling those to be described in connection with the abdominal fat tissue. The splenic vein contained a mixed thrombus four inches long and one-half the thickness of the little finger, and continued into several of the pancreatic branches. The spleen was soft and small. The liver was moderately granular and fatty. The gall-bladder was contracted about several calculi, the largest nearly the size of the end of the thumb, and projecting into the cystic duct. The walls were thick and tough; the mucous membrane thin, and streaked with opaque-white lines. The cystic and common ducts were dilated.

The subperitoneal fat-tissue of the abdominal wall, mesentery, omentum, and perinephritic region contained numerous superficial and deep-seated small, circumscribed, rounded, opaque-white, and saffron-colored patches. In general they were elongated, measuring an inch by a quarter of an inch. Rarely they were nodular, as large as a filbert, and on section contained dark-brown, discolored centres. Sections of the frozen fat-tissue showed numerous cavities containing a shreddy tissue, infiltrated with opaque-pink fluid of creamy consistency. Microscopical examination of the fresh specimens showed numerous leucocytes and large round-cells, with granular detritus, opaque-white specks, and bundles of small acicular or rod-like crystals.

There was nothing abnormal in the appearance of the stomach or intestines.

The microscopic examination of the hardened pancreas shows a small quantity of interlobular fat-tissue. In this are numerous islets of necrosis, their appearances being essentially the same as those found in the parapancreatic fat-tissue.

The larger ducts are filled with clumps of coherent, detached, cylindrical epithelium, with distinctly stained nuclei.

The gland-cells in certain parts, especially in the immediate vicinity of the necrotic fat-tissue, are swollen, granular, confluent, and without evident nuclei. The outlines of the acini are irregular or indistinct. Certain of the lobules present a diffused infiltration of round-cells. Many of the acini show a central accumulation of homogeneous hyaline material, with corresponding flattening of the gland-cells.

Sections of the subperitoneal and parapancreatic fat-tissue present numerous patches, varying in extent and shape, all more or less rounded, oblong, or leaf-like. They are sharply defined by a limiting zone, varying in width, of small, round-celled infiltration between the fat-cells. Next this cellular layer is often found a narrow, orange-colored streak, in which are frequent granules and round clumps of small, orange-colored acicular crystals. Within the patch the outlines of the fat-cells are often distinct over considerable areas, but elsewhere are almost wholly, if not entirely, obliterated by the clusters of large and long acicular crystals and granular material. These crystals were isolated, dissolved, and recrystallized by Dr. Harrington, assistant in chemistry at the Harvard Medical School, and are pronounced by him to be identical with those obtained from ordinary tallow.

In addition to the crystals and granules, bacteria were found, both as circumscribed colonies within, and as diffused accumulations without, the patches.

In the fat-tissue surrounding the patches of necrosis are occasional hemorrhagic spots, with distinct outlines of red blood-corpuscles. Small and irregular patches of leucocytes, without intercellular substance, are to be seen, occupying more space than that of several fat-cells.

Occasionally, elongated bands are found considerably wider than any visible blood-vessels. They are composed of agglomerated round-cells, with solitary larger corpuscles containing granular pigment. At each side of the central streak are numerous isolated, round and larger, flat, polygonal cells with large nuclei. These, in turn, are defined externally by a margin of clustered leucocytes. Arteries and veins are free from obvious changes.

The following record of Case LXX. is given as fully as possible. It is to be regretted that neither the specimen nor the detailed description of the pancreas was preserved. A gentleman, fifty-nine years of age, temperate, strong, and healthy, weighing two hundred pounds, was thrown from his carriage, but did not consider himself injured. Four days later he was seized with intense pain in the left abdomen, associated with nausea and vomiting. At the outset the pulse was 80, and the respiration 24. There was no fever at any time. After a few days the pain and tenderness were relieved. From the outset extreme exhaustion was a conspicuous symptom. Eventually rapid and labored breathing came on, and the patient died on the tenth day. A memorandum on the back of the letter accompanying the specimens, and giving the clinical details, states that the conspicuous lesions were a gangrenous peripancreatitis and necrosis of the mesenteric fat-tissue. From the lack of further details the question might be raised as to the exact method of origin of the gangrene and necrosis. At the time, I was satisfied that the case was analogous to that which immediately precedes, viz., Case LXVII.

Of these fifteen cases seven were males and eight females. Their ages were as follows:

Years of age.	Number of cases.
From 22-25	1
" 25-30	1
" 30-35	1
" 35-40	2
" 40-45	2
" 45-50	2
" 50-55	2
" 55-60	2
" 60-63	1
Past middle life	1
	15

They were from all walks and conditions of life. Five were very fat, one was decidedly lean; five were strong, and two of them were addicted to alcoholic drinks.

Eight of these patients had been subject to earlier more or less repeated attacks of digestive disturbance. These were always attended with pain, usually referred to the region of the stomach or stated to be biliary colic. They were frequently accompanied with vomiting, and, in one-third of the number, with jaundice. Constipation, or irregular defecation might occur, and in the latter case the stools were black.

At first sight the etiological importance of perforating gastric ulcer and of gall-stones seems immediate, as illustrated by Cases LVII., LVIII., and LXVII.

The comparison of these cases with others in the series would suggest that these affections were more important from the associated inflammation of the mucous membrane, with its opportunity of extension into the pancreatic duct, than from the actual or possible perforation of the biliary or digestive canal.

A traumatic cause for the fatal illness was possible in two instances.

In the one the patient was seized with a sudden pain in the lower abdomen, while turning a handspring, a week before the fatal illness. In the other the patient was thrown from his carriage five days previous. One person was seized with her attack while under treatment for an umbilical hernia of two years' duration. A mid-day meal and a hard day's work were each the immediate antecedent of the attack.

The illness usually, in four-fifths of the cases, began suddenly, without definite cause, with abdominal pain. This was rarely slight, but often intense and severe. It was referred to the stomach, left hypochondrium, navel, mid-abdomen, and left loin and back. The pain might be constant or paroxysmal like a biliary colic, and a diagnosis of gall-stones was made in one instance.

Vomiting was the next symptom of importance, being recorded in three-fifths of the cases. Partly digested food was ejected, or a viscid or slimy fluid, often green, sometimes black or bloody. Constipation was, at times, so conspicuous that, in connection with the other symptoms, a diagnosis of intestinal obstruction was made in three cases, and laparotomy performed in two. On the contrary, frequent bilious stools might occur.

The urine might contain albumen and casts. In one case an excess of indican was repeatedly sought for—in vain.

Jaundice, usually slight, occurred after a few days in one-fifth of the cases.

Chills were occasional, sometimes at the onset, and fever was frequent after a few days. The temperature was likely to be low, in the vicinity of 100° F., although it might be as high as 104° F. There might be no conspicuous fever throughout the course of the disease.

Swelling of the abdomen was present in one-half of the cases, usually occurring as a late symptom.

It might be slight or enormous, general, or limited to the epigastrium, or to the left half, where a fluctuating tumor was to be recognized. The abdominal swelling was usually tympanitic, although dulness might be present in the flanks. The spleen was palpable in a single instance, and the parotid became acutely swollen in another case.

As the disease ran its course weakness became apparent. Vomiting, perhaps diarrhœa, and abdominal pain were noticeable, suggestions of peritonitis were frequent, and symptoms of collapse were likely to take place, being followed more or less rapidly by death, which occurred as follows:

On the 4th day in	1 case.
" 5th "	1 "
" 10th "	3 "
" 13th "	1 "
" 15th "	1 "
" 18th "	1 "
At the end of 3 weeks in	1 "
" 5 "	1 "
" 7 "	1 "
" 8 "	1 "
Not stated in	1 "

Two patients recovered with the discharge of a slough through the bowel, one at the end of eight weeks. One of these patients was living seventeen years later.

The diagnosis lay between intestinal obstruction, biliary calculi, and peritonitis.

The appearance of the pancreas varied according to the duration of the disease. About the fourth day[91] the pancreas may be doubled in size, dark red, and of somewhat diminished consistency. It may be red, on section, or mottled red and gray. The tip may be shreddy, or the entire gland may be transformed into a dark, slaty-colored, stinking mass. The adjacent parts may be infiltrated with a discolored, purulent fluid, or the coils of intestine near the pancreas may be united by recent adhesions together and to the under-surface of the diaphragm.

The latter may show a dirty grayish-white, shreddy appearance, and its thickened substance may contain small collections of dirty-gray puriform fluid, the tissue itself being quite shreddy.

On the tenth day[92] the pancreas may be dark brown, dry, firm. It may have a hemorrhagic coating or lie in a sponge-like meshwork infiltrated with dirty-green fluid.

On section there may be dry hemorrhagic masses, with yellow spots of softening, or the lobules may be indistinct, with intervening opaque-white patches, like those to be found in the neighboring fat-tissue. The hemorrhagic infiltration may extend beyond the gland. The wall of the duct and the overlying tissue may be necrotic and hemorrhagic. The perinephritic fat and that near the suprarenal capsule may contain extensive hemorrhages.

Toward the end of the second week[93] the pancreas may be a soft, black, shreddy, sloughy, gangrenous mass, the central part being incapsulated by the peripheral portion. Between the pancreas and the transverse colon may be a large quantity of chocolate-like fluid, and large, bluish-black clots. Or the tail and a part of the body may be soft, gray-discolored, and infiltrated with a thin, ichorous fluid, while the parapancreatic tissue is partly purulent and partly ichorous.

A few days later[94] the pancreas may be a thin, flabby, friable, grayish band, lying in a cavity behind the stomach and attached by a few shreds to the omental wall. The cavity may contain ichorous fluid and communicate with the stomach by several openings with frayed edges.

At the end of three weeks[95] the dark-brown pancreas may lie nearly free in the omental cavity, attached only by a few rotten shreds of fibrous tissue. The cavity may contain abundant ichorous bloody fluid, and communicate with the duodenum. During the fourth and fifth weeks the pancreas may be discharged as a slough from the bowels.

In the fifth week[96] the pancreas may lie free, as if macerated, in a cavity extending behind the cæcum and descending colon, on both sides of the spine, as far as the pelvis. The contents may also be a greasy, grayish-yellow detritus, with fragments of necrotic fat-tissue nearly as large as hens' eggs. The latter are apparently seques-

[91] Cases LXII., and LXVI.
[92] Cases LXV. and LXVIII.
[93] Cases LXVII. and LXIX.
[94] Case LVI.
[95] Case LX.
[96] Case LXIV.

trated from spaces with walls of a dark-brown or iron-rust color.

At the end of seven weeks[97] the pancreas may be transformed into a cylindrical, shreddy mass of brownish-black, friable tissue. This may lie in the omental cavity, which is filled with offensive, black fluid and communicates with the stomach and jejunum.

Thrombosis of the splenic vein frequently accompanies the pancreatic lesion, and is usually parietal. The thrombus in the early stages is soft and dark red, or it may be of a reddish-gray color. It has been found partly puriform, and extending to the portal vein, at the end of the second week.

A little later it has been found completely obstructing. The spleen may be soft, and is either large or small. Disseminated fat-necroses are often seen.

From the frequent mention of the position of the pancreas in the omental cavity, filled with ichorous pus, it is evident that an acute peritonitis with liquid exudation is a frequent, if not the usual, occurrence. The pus may be prevented from entering the general peritoneal cavity by adhesive obliteration of the foramen of Winslow.

Peritoneal adhesions between coils of intestine are not infrequent, especially in the vicinity of the root of the mesentery. A general suppurative peritonitis is of comparatively rare occurrence.

The inflammatory process may be extended to the pleural and pericardial cavities, and an acute leptomeningitis has been found on the thirteenth day. At a late stage of the disease, death may result from pulmonary embolism.

The possibility of an arrest of the processes resulting in pancreatic necrosis and parapancreatitis is evident from Case LX. Although the patient died of diabetes, the symptoms of which lasted at least a year, the tail of the pancreas, was flabby and macerated, and its tip lay free in a cyst arising immediately from the pancreatic capsule.

It is obvious from the anatomical appearances in this group of cases of gangrenous pancreatitis, para- and peripancreatitis, that the lesions are associated with a hemorrhagic pancreatitis in a considerable number of cases. In at least one-half there is mention of hemorrhage into the pancreas or of such discoloration as to suggest a hemorrhage.[98]

A comparison of the clinical history of this series of cases with that of hemorrhagic pancreatitis will show a strong resemblance in predisposing causes, and in the nature of the symptoms. These are essentially identical in nearly all. In many of the remaining cases the symptoms are those which would favor the diagnosis of a hemorrhagic pancreatitis.

In any event, they represent the termination of acute pancreatitis in gangrene, with an extension of the process to the continuous tissue.

Viewing the subject from the anatomical side, it is evident that cases of hemorrhagic pancreatitis may terminate fatally within a few days, either with or without necrosis of the gland and parapancreatic fat-tissue. They may also prove fatal in from one to four weeks, in consequence of an extension of the disease to the para- and peri-pancreatic tissues, with gangrene of the parts concerned.

Disseminated Fat-necrosis.—Considerable prominence has necessarily been given to the necrosis of fat-tissue associated with pancreatic inflammations.

Hooper[99] probably intended to describe the appearances due to this condition, but Ponfick[100] first distinctly recognized the condition. He called attention to a disseminated necrosis of bone-marrow in a case of empyema and extensive amyloid degeneration. The appearance was that of innumerable, submiliary, yellowish-white specks in the amber-colored marrow. They proved to be composed of an agglomeration of large cells crowded with fine granules. These were enormous granular corpuscles, which, from their size and shape, were regarded as identical with fat-cells. There were also narrow and elongated, fatty-degenerated cells, so disintegrated in many places as to form a finely granular detritus. Ponfick attributed these spots of necrosis to a fatty degeneration of the marrow.

Balser,[101] who became an assistant of Ponfick, then professor at Göttingen, found similar appearances in the marrow and in the subpericardial fat, each in an old man. In the examination of twenty-five unselected cases, he found such patches in the region of the pancreas in five instances. Two of these patients died of cancer of the stomach, and the remaining three were cases of pulmonary consumption, hepatic cirrhosis, and aortic endocarditis respectively. There remain two additional cases in which he found fat-necrosis.[102]

These he regarded as illustrative of the fatal effect of a disease—fat-necrosis—which, when extensive, was associated with old and fresh hemorrhage. Such hemorrhages near the pancreas might produce death in the manner resembling that described by Zenker as pancreatic apoplexy. He regarded the fat-necrosis as the result of an excessive growth of fat-tissue which destroyed the tissue it surrounded. From its association it was a special source of danger to fat persons. His conclusion is:[103] "An excessive growth of the fat-cells near the pancreas occurs in many men. It may become so excessive, in very fat people, that a large part of the abdominal fat dies, and it thus proves fatal either on account of the quantity destroyed or the associated hemorrhage."

Chiari[104] had also found fat-necrosis associated with pancreatic disease,[105] although in his published report he made no note of the characteristic appearances. He confirmed Balser's statements concerning the occurrence of fat-necrosis in and near the pancreas. Since he had observed it in five out of six cases of pancreatic disease, a certain connection between the two was suggested. Three of these were cases of sequestration of the pancreas. The remaining three were a phthisical diabetic, a case of chronic Bright's disease and interstitial pneumonia, and an infant with congenital syphilis. He found no evidence of an excessive circumscribed growth of fat-tissue as claimed by Balser, but regarded the necrosis as a degenerative process, analogous to the retrograde metamorphosis in other tissues, and the result of a severe marasmus. He admitted it as a cause of pancreatic hemorrhage, and that it might, hence, prove fatal. He did not regard the sequestration of the pancreas as the result of this necrosis, since he could not understand how extensive circumscribed necrosis about the pancreas could isolate so large an organ.

Finally, Van Giesen[106] presented to the New York Pathological Society microscopical sections illustrative of fat-necrosis. They came from the pancreas of a woman, eighty years of age. There were two nodules, the larger 5 mm. in diameter. Nothing is stated with reference to any associated lesions, and the necroses were regarded as degenerative. There is a general agreement as to the appearance of these nodules. They are multiple, disseminated, are found in the subperitoneal fat-tissue of the abdominal wall, mesentery, omentum, and in that within and around the pancreas. Chiari[107] found them also in the subpericardial, subpleural, and subcutaneous fat. Their presence in marrow has already been mentioned.

Such nodules were present in one case of pancreatic hemorrhage, certainly in one, probably in two, cases of acute suppurative pancreatitis. They were seen in six cases of hemorrhagic and in six of gangrenous pancreatitis. These nodules, in most of the cases, occurred in great numbers, the smallest not larger than a pin-head, and strongly suggestive of miliary tubercles or malignant

[97] Case LVIII.
[98] See Cases LVIII., LX., LXI., LXII., LXV., LXVI., LXVII., LXIX.
[99] Case XIX. [100] Virchow's Arch., 1872, lvi., 541.
[101] Loc. cit. [102] Cases XXIV., and LXVI. [103] Loc. cit., 534.
[104] Prager med. Woch., 1883, viii., 285.
[105] Cases LVIII., and LX.
[106] N. Y. Medical Record, 1888, xxxiii., 477. [107] Loc. cit., 285.

new formations. The largest were of the size of a hen's egg. All were more or less rounded, of an opaque-white or yellowish-white color, and of soft, tallowy consistency. They occurred alone or in groups, superficially and deep-seated. The smallest were often surrounded by an injected, vascular wreath, while many were bounded by a distinct, narrow, reddish-brown zone indicative of hemorrhage.

Chiari[108] found the larger nodules (although he does not state in which of his six cases) incrusted with lime, and surrounded by a distinct, fibrous capsule, from which threads occasionally ran into the surrounding fat-tissue. The tallowy material could be readily picked out of these nodules, and, when examined microscopically, consisted largely of acicular crystals resembling those found in fat, in addition to fat-drops and a granular detritus. Dr. Harrington's micro-chemical examination of these crystals shows their identity with those obtained from tallow. He regards them as stearine. In this view he confirms the conclusion reached by Balser.[109]

The microscopical appearances have already been described in sufficient detail.

Balser states[110] that his examination shows that the same process is concerned in the mild and fatal cases. Neither he nor Chiari was able to find any evidence of a bacterial or mycotic process, nor was the latter able to discover any changes in the neighboring vessels. The microscopical appearances found in Case LXVII. make evident certain features in the more serious fat-necrosis which supplement the results described by other observers. Tracts of round-celled infiltration were found at the border of the patches. Chiari also states that the fibrous threads continued from the capsules were infiltrated with round-cells. The surrounding fat-tissue gave frequent evidence of an acute lymphangitis, of abscesses, and of thrombosis. Bacteria were found in and near the patches of necrosis. They were likewise present in a neighboring vessel and in a venous thrombus. The association of these appearances with the evidences of fat-necrosis indicate most directly that the latter condition, in fatal cases at least, instead of being simply the result of a hyperplasia or of a degeneration, is connected with an acute inflammatory process somewhat akin to the phlegmonous inflammation of the subcutaneous fat. The cause of its dissemination would thus, probably, depend upon the transfer of an infecting material, either through vascular currents, especially lymphatics, or by direct inoculation of the peritoneum in case of the superficial nodules. The multiple disseminated fat-necrosis found associated with fatal pancreatic disease is thus to be regarded as the result of the inflammation of the fat-tissue extended from the pancreas or its vicinity. The pancreas is usually the seat of the primary process, but the necrotic inflammation of the fat-tissue may be secondary to a possible primary lesion of the biliary tract or stomach, as suggested by Cases LVII. and LVIII.

The spots of dead fat-tissue observed in the marantic cases may be degenerative, as claimed by Ponfick and Chiari. They certainly are neither necessarily nor exclusively found in fat persons. There is no confirmatory evidence of their hyperplastic nature. The inflammatory fat-necroses, in most cases, were associated with evidences of putrefactive conditions.

It would thus appear that there is a necrobiotic necrosis of the fat-tissue, and an inflammatory necrosis, the latter tending to become gangrenous, both of which may be found within or near the pancreas. The inflammatory and gangrenous varieties are of especial importance in permitting the sloughing of the pancreas, and in most instances are the result of an acute inflammation of this gland.

Although the serious varieties of fat-necrosis may be recognized as causes for sequestration of the pancreas, their relation to pancreatic hemorrhage must be expressed in different terms from those employed by Balser and Chiari.

A simple, necrobiotic fat-necrosis may be associated with fatal pancreatic hemorrhage, as suggested by Case V., but there is no necessary etiological significance in this association. Most fatal cases of pancreatic hemorrhage occur without either variety, and the simple necrosis usually takes place without hemorrhage.

When the severe varieties of fat-necrosis accompany pancreatic hemorrhage, inflammation of the pancreas is present. The fat-necrosis cannot be regarded as the essential cause of the hemorrhage in such cases, since it occurs in suppurative pancreatitis when there is no hemorrhage in the pancreas. Furthermore, when hemorrhages are found near the necrotic patches, they are usually very slight, and limited to the immediate vicinity of the patch.

The evidence presented in this paper is intended to show that: Acute inflammation of the pancreas is a well-characterized disease, of much greater frequency than has generally been thought. Its appreciation is deemed of consequence, because it usually represents a serious complication of what is generally regarded as a relatively simple affection, viz., gastro-duodenitis. It is an important cause of peritonitis, and one readily overlooked. It has been repeatedly confounded with acute intestinal obstruction, and has thus led in several instances to an ineffective laparotomy.

Acute pancreatitis commonly originates by the extension of a gastro-duodenal inflammation along the pancreatic duct. It may also be induced by the occurrence of hemorrhage in the pancreas, which, in turn, may be of traumatic origin, although usually arising from unknown causes. The pancreatic hemorrhage may likewise be secondary to inflammation of the pancreas.

The anatomical varieties are the suppurative, hemorrhagic, and gangrenous. The first may be acute, but is usually subacute or chronic. The second is generally peracute or apoplectiform. The gangrenous variety runs an acute course.

Suppurative pancreatitis may result in an evacuation of the abscesses into the stomach or duodenum. They may open into the cavity of the great omentum, which, transformed into a large peritoneal abscess, may, in turn, open into the digestive tract. Pylephlebitis and abscesses of the liver may result. Disseminated fat-necrosis is comparatively infrequent.

Hemorrhagic pancreatitis usually proves fatal in from two to four days. The gross lesions are then those of hemorrhage within and near the pancreas, extending into the subperitoneal fat-tissue, perhaps as far as the pelvis. Disseminated fat-necrosis is common.

Gangrenous pancreatitis, although it may be secondary to a perforating inflammation of the gastro-intestinal or biliary tracts, usually results from a hemorrhagic pancreatitis, and proves fatal in the course of a few weeks. The gangrenous processes extend to the parapancreatic tissue, and produce more or less complete sequestration of the pancreas. The peritoneal wall of the omental cavity becomes inflamed, that covering the pancreas may be destroyed, and the sequestrated gland may lie in the omental cavity, soaked in pus, and attached only by a few shreds. Both pus and pancreas may be discharged into the intestine. Splenic thrombo-phlebitis is not uncommon, but hepatic abscesses are rare. Disseminated fat-necrosis is frequent.

The common symptoms of acute pancreatitis are sudden, severe, often intense, epigastric pain, without obvious cause, in most cases followed by nausea, vomiting, sensitiveness, and tympanitic swelling of the epigastrium. There is extreme prostration, frequent collapse, low fever, and a feeble pulse. Obstinate constipation for several days is the rule, but diarrhœa sometimes occurs. If the case does not end fatally in the course of a few days, recovery is possible, or a recurrence of the symp-

[108] Loc. cit., 299. [109] Loc. cit., 522. [110] Loc. cit., 528.

toms in a milder form takes place, and the characteristics of a subacute peritonitis are developed.

It is evident that all treatment, at the outset, can be nothing but palliative. With the establishment of an omental peritonitis is the opportunity for the surgeon. The possibility of the successful removal of the gangrenous pancreas is suggested by the healthy condition of a patient seventeen years after he had discharged this organ from his bowels.

The spots of dead fat-tissue observed in the marantic cases may be degenerative, as claimed by Ponfick and Chiari. They certainly are neither necessarily nor exclusively found in fat persons. There is no confirmatory evidence of their hyperplastic nature. The inflammatory fat-necroses, in most cases, were associated with evidences of putrefactive conditions. It would thus appear that there is a necrobiotic necrosis of the fat-tissue, and an inflammatory necrosis, the latter tending to become gangrenous, both of which may be found within or near the pancreas. The inflammatory and gangrenous varieties are of especial importance in permitting the sloughing of the pancreas, and in most instances are the result of an acute inflammation of this gland.

Although the serious varieties of fat-necrosis may be recognized as causes for sequestration of the pancreas, their relation to pancreatic hemorrhage must be expressed in different terms from those employed by Balser and Chiari.

A simple, necrobiotic fat-necrosis may be associated with fatal, pancreatic hemorrhage, as suggested by Case V., but there is no necessary etiological significance in this association. Most fatal cases of pancreatic hemorrhage occur without either variety, and the simple necrosis usually takes place without hemorrhage.

When the severe varieties of fat-necrosis accompany pancreatic hemorrhage, inflammation of the pancreas is present. The fat-necrosis cannot be regarded as the essential cause of the hemorrhage in such cases, since it occurs in suppurative pancreatitis when there is no hemorrhage in the pancreas. Furthermore, when hemorrhages are found near the necrotic patches, they are usually very slight, and limited to the immediate vicinity of the patch.

Conclusions.—The evidence presented in this paper is intended to establish the fact that acute inflammation of the pancreas is both a well-characterized disease and one which is much more frequent than is generally thought. It is of great consequence that it should be recognized, for the following reasons: It represents a serious complication of what, by itself, is a relatively simple affection, viz., gastro-duodenitis; it is an important cause of peritonitis, and one readily overlooked; it has been repeatedly confounded with acute intestinal obstruction, and has thus led, in several instances, to an ineffective laparotomy—an operation which, in the early stages of this disease, is extremely hazardous.

Method of Origin.—Acute pancreatitis commonly originates by the extension of a gastro-duodenal inflammation along the pancreatic duct. It may also be induced by the occurrence of hemorrhage in the pancreas. This may be of traumatic origin, although usually arising from unknown causes. The pancreatic hemorrhage may likewise be secondary to inflammation of the pancreas.

Pathological Anatomy.—The anatomical varieties are the suppurative, hemorrhagic, and gangrenous. The first may be acute, but is usually subacute or chronic. The second is generally peracute or apoplectiform. The gangrenous variety runs an acute course.

Suppurative pancreatitis may result in an evacuation of the abscesses into the stomach or duodenum; or they may open into the cavity of the great omentum, which, transformed into a large peritoneal abscess, may, in turn, open into the digestive tract. Pylephlebitis and abscesses of the liver may follow. Disseminated fat-necrosis is comparatively infrequent.

Hemorrhagic pancreatitis usually proves fatal in from two to four days. The gross lesions are then those of hemorrhage within and near the pancreas, extending into the subperitoneal fat-tissue, perhaps as far as the pelvis. Peripancreatitis may be expected, and disseminated fat-necrosis is common.

Gangrenous pancreatitis, although it may be secondary to a perforating inflammation of the gastro-intestinal or biliary tracts, usually results from a hemorrhagic pancreatitis, and proves fatal in the course of a few weeks. The gangrenous processes extend to the parapancreatic tissue, and produce more or less complete sequestration of the pancreas. The peritoneal wall of the omental cavity becomes inflamed, that covering the pancreas may be destroyed, and the sequestrated gland may lie in the omental cavity, soaked in pus, and attached only by a few shreds. Both pus and pancreas may be discharged into the intestine. Splenic thrombophlebitis is not uncommon, but hepatic abscesses are rare. Disseminated fat-necrosis is frequent.

Symptoms.—The common symptoms of acute pancreatitis are sudden, severe, often intense, epigastric pain, without obvious cause, in most cases followed by nausea, vomiting, sensitiveness, and tympanitic swelling of the epigastrium. There is prostration, often extreme, frequent collapse, low fever, and a feeble pulse. Obstinate constipation for several days is the rule, but diarrhœa sometimes occurs. If the case does not end fatally in the course of a few days, recovery is possible, or a recurrence of the symptoms in a milder form takes place, and the characteristics of a subacute peritonitis are developed.

Diagnosis.—The symptoms are essentially those of a peritonitis beginning in the epigastrium and occurring suddenly, during ordinary health, without obvious cause. The diagnosis, therefore, is based on pain, tenderness, and tympany limited to the region of the pancreas, and on the gradual development of a deep-seated peritonitis in the same place.

Differential Diagnosis.—The differential diagnosis lies, practically, between an irritant poison, perforation of the digestive or biliary tract, and acute intestinal obstruction. An irritant poison is excluded by the history of the case and by the examination of the vomit.

Perforating ulcer of the stomach or duodenum is to be excluded by the absence of pain after eating, hemorrhages from the digestive canal, and cachexia. Acute perforation of the transverse colon is rare, and the resulting peritonitis progresses more rapidly, and is likely to be general. Perforation from gall-stones is usually preceded by attacks of biliary colic and jaundice, while the seat of the pain is rather in the region of the gall-bladder than in that of the pancreas.

Acute intestinal obstruction is most likely to give rise to doubt It is to be eliminated by determining, through injection, the patency and capacity of the large intestine, by the rarity in the epigastrium, of an obstructed small intestine, by the immediate presence of localized tenderness, and by the usual absence of a conspicuous general tympany or limited distention of intestinal coils.

Treatment.—It is evident that all treatment, at the outset, can be nothing but palliative. With the formation of pus in the omental cavity comes the opportunity for the surgeon. The possibility of the successful removal of the gangrenous pancreas is suggested by the healthy condition of a patient seventeen years after he had discharged this organ from his bowels.

An unexpectedly early verification of the above conclusions has occurred within the week following the delivery of this lecture.

The case was that of a well-known gentleman of Boston, and presented so fully the symptoms above mentioned, that, when called, as consultant, I was able to make a diagnosis of acute pancreatitis, which was eventually substantiated.

The following is a brief summary of the essential features of this case, which will, hereafter, be more fully reported:

The patient was suddenly seized, February 19th, while apparently in his usual good health, with a severe pain and tenderness a short distance above and to the left of the navel. This was followed by vomiting and a certain degree of prostration. The administration of nearly a grain of morphia gave relief. I saw him in the evening, and during the subsequent two days of his life. He died on the third day. The localized pain was more or less constant, with occasional severe twinges, and was also to be elicited by intercostal pressure in the splenic region. The sensation of a constricting band in the epigastric region was likewise mentioned. At the close of the second day the lower abdomen became sensitive in spots. There was vomiting on the first day, but not later, and the bowels were confined. The abdomen was somewhat distended and dull, except in the epigastrium. The pulse was moderately accelerated, and the temperature slightly elevated.

The diagnosis lay between acute mechanical intestinal obstruction, perforative peritonitis, and acute pancreatitis. The majority of the consultants agreed to the first as the most probable condition, and advised a laparotomy, which was performed on the third day. Spots of fat-necrosis were seen in the omentum, but there was no evidence of mechanical obstruction.

At the post-mortem examination the characteristic appearances of hemorrhagic pancreatitis were found, also numerous spots of disseminated fat-necrosis.

Original Articles.

STRETCHING THE SPHINCTER ANI AS A METHOD OF CURE IN OBSTINATE CONSTIPATION.[1]

By CLEMENT CLEVELAND, M.D.,
NEW YORK CITY.

THE operation of stretching the sphincter ani for the cure of fissure of the anus is one that has been long in vogue and rightfully holds its position as the quickest and surest method of relieving that troublesome affection.

It is the custom of some operators to stretch the sphincter after perineorrhaphy, to keep the muscle in a quiescent state during the first few days, the belief being that thus a greater chance of complete union is assured. I have had faith in it myself, and often practise it where I think there is any risk from such a source.

I long ago observed that in many cases thus operated upon, in which obstinate constipation had existed, that could not be attributed to pouching of the posterior wall of the vagina, the constipation was cured. I noticed the fact, without at the same time thinking of its application to cases of constipation where no fissure existed, till April of 1884, when a case came under my care that baffled every effort to relieve; it was then it occurred to me to stretch the sphincter.

The patient was a young woman, twenty-five years of age, and unmarried, whose occupation was a sedentary one. She had been bred in affluence, but loss of property had compelled her to seek her own living, and she secured employment as an amanuensis. Her sedentary life, with much worry and anxiety, led to carelessness about the requirements of health. She took little or no exercise, and used cathartics and enemata to relieve the bowels. When I first saw her the trouble had lasted several years, and had become so difficult to relieve that she was fairly desperate. It was the worst case I have met with. There was no abnormal sensitiveness of the sphincter. Examination revealed no fissure, the fæces were of good color, but hard and dry, and often broken up into scybala, and there seemed to be no intestinal secretion whatever. There was no discoverable obstruction in the pelvis or elsewhere. It was evidently the result of fixed habit and the constant use of cathartics and injections.

There are cases, I am aware, where the bowels are not relieved for days at a time and the person remains in good health, this being apparently the normal condition. Such, however, was not the case with the one I am now speaking of. She was in constant distress, though without actual pain.

The operation having been decided upon, the patient was placed in Sims' position and the sphincter thoroughly stretched, and so thoroughly was it done that some of the fibres of the external sphincter were torn. As an immediate result there was a prolapsus of the rectum, which, from its swollen turgid condition, was troublesome to keep replaced, till the patient had recovered thoroughly from the etherization. It is not necessary to stretch to the point of rupturing the muscle, even to a slight extent, though no apparent harm was done in this case. It is, however, difficult to avoid sometimes, the muscle giving way before the operator is aware. This patient was cured and has never had a return of the trouble.

Another case was that of a young woman, of about the same age as that of the previous patient, and she, too, had been suffering several years. In this case there was a complication of disorders; constant pain in the uterus and ovaries; constant desire, with inability, to relieve the bladder; menorrhagia and obstinate constipation. The uterine and bladder troubles were of late development.

Examination revealed a large, sensitive, anteverted uterus, with excessive sensitiveness in the region of the ovaries, and large fæcal accumulations in the rectum. There was pus and blood in the urine, and blood in large amount in each passage from the bowels.

She had been taking a small amount of morphia each night at bed-time.

To move the bowels she used a bottle of sweet-oil every other day. Cathartics, except in very large doses, had lost their effect. The oil seemed to produce a better result than anything else, so for some time she had been using that alone. The relief, even with this, was not perfect.

The urine was drawn every other day by catheter, and was sometimes allowed to remain in the bladder three and four days at a time. The condition of the patient can be imagined. Her nervous system was in a deplorable state. She was anæmic and had lost much flesh.

I attributed most of the pelvic symptoms to the obstinate constipation, from the constant pressure of large fæcal masses upon the intrapelvic vessels and nerves, and decided that something must first be done in that direction before attempting any treatment of the uterine and ovarian conditions. Accordingly the patient was placed under ether and the sphincter thoroughly stretched. In the after-treatment I used small injections of glycerine for a week or a little longer, after which there were daily evacuations for some time. With the relief of the rectum and colon, aided by local treatment and medication, the cystitis was cured and the uterine and ovarian trouble improved, though the constant pain and sensitiveness in one ovary—the right—continued. For this reason it was impossible for the patient to take exercise, and, notwithstanding the care and attention paid to her diet, she was troubled greatly by indigestion. At the end of two months there was a return of the constipation, as I feared there would be. Having experienced so much relief from the first operation, she was anxious to have it repeated. This was done, and followed, as before, by relief. The patient was growing stronger all this time, and the digestive functions were performing their work better; but winter came on and she was confined to the house much of the time. In the spring, after a period of four months, she began to experience some little difficulty with her stools, though constipation had not recurred to the same degree as before. During the winter my attention had been devoted to relieving the pain and sensitiveness in the ovaries, but with slight and only temporary success at any time. I had commenced

[1] Read at a meeting of the Practitioners' Society of New York, February 1, 1889.

to fear that the ovary would have to be removed; but, as a last resort, before coming to that, I decided to put in a seton. The patient was again etherized, and a deep seton, consisting of fifteen strands of twisted silk, was introduced over the right ovary, and afterward the sphincter again stretched. To cut short this part of the history, the seton began to afford relief almost at once, and the pain gradually disappeared. It was worn five months, though after the fourth month rarely was even a twinge of pain felt in the ovary. It was worn for so great a length of time because the patient was reluctant to have it removed, and because I wished to be sure of its permanent effect. It is now eight months since the seton was introduced and the sphincter stretched, and three months since the seton was removed. There has been no return of pain and sensitiveness in the ovary, and no return of the constipation. The patient appears perfectly well. Though the treatment of ovarian disease forms no part of the subject of this paper, yet I have introduced it here because the two conditions were so closely associated in the same patient, and because the constant pain in the ovary may have been, and probably was, a factor in the causation and continuance of the constipation.

I have had quite a large number of cases, ten in all, the details of which would add but little of interest in the discussion, and I therefore omit them. The first history related is of a typical case, and the second of a very unusual one. They serve my purpose as illustrations.

In but one case, the one last related, was the operation repeated, and here it would not have been necessary but for the complications presented.

The theory of the operation is, of course, simple and easy of explanation. When fæcal matter passes from the colon into the rectum, it there arouses the conjoined muscular action which is to expel it. The action of the sphincter muscles is twofold, that of a barrier to involuntary movement, and an aid to expulsion of fæces. The internal sphincter is merely an aggregation of intestinal muscular fibres, and the joint action of both sphincters, in aiding the expulsion of fæces, is the same as the peristaltic movements of the intestines, only much more powerful. Where obstinate constipation of long standing exists, the general condition is usually debilitated. The rectum is distended by hard, dry fæces. The sensibility of its nerves is blunted and the contractile power of its muscular fibres so enfeebled that, even with the aid of the expiratory muscles, it is unable to overcome the resistance of the sphincter to the passage of large fæcal masses. The sphincter is here a barrier merely. It is stimulated to excessive action by the hard mass packed up against it, and cannot grasp and aid in its downward movement.

Where the integrity of the sphincter is lost, as in complete rupture after childbirth, there is nothing to check the involuntary action of the rectal muscles, and involuntary evacuations are likely to result. Where the operation of stretching has been done, the sphincter, no longer able to contract forcibly, offers but a passive resistance to the passage of fæces. It can check the effect of involuntary action of the intestines, but not when the expulsive force of the expiratory muscles are brought into play.

And now a word as to the selection of cases for the operation. There are but few, no matter what the cause, whether of local or general origin, that are not, in my judgment, helped by it. But, as a curative agent, it is strictly applicable to cases whose causes are general, such as habit, improper diet, the abuse of cathartics, enemata, etc.

I do not advocate its employment indifferently. A careful investigation should be made, and an accurate diagnosis arrived at, if possible. The treatment does not end with the operation. It is really but the first step, while the after-management is most important. It enables the expiratory muscles to prevent the accumulation of fæcal matter, and gives the rectum time to recover its power and sensibility. It gives the digestive functions rest from the constant and disturbing effect of laxative medicines, and, above all, from the constipation itself, which certainly disturbs primary digestion, destroys appetite, and, in its remote effects, produces anæmia and wasting. Rest afforded to the digestive function, I reiterate for the sake of emphasis, is, perhaps, the most important factor in the cure.

As I have said, the after-care is as essential as the operation, and a physician cannot be too careful and positive in laying down rules that he should insist upon being followed. It is as easy for the patient to relapse into the former condition as it was to form the habit originally, if all causes which lead to the trouble are not sedulously avoided. Careful attention must be paid to diet especially. A suitable, and proper amount of exercise suited to each individual case should be insisted upon. The skin should be kept in an active condition by bathing or sponging with cool water daily. The importance of regularity of going to stool cannot be too strongly urged.

I have not attempted to look up the literature of this subject, and I do not know but that I am treating of an operation which others have previously done and described. I have, however, tried to keep informed, and do not think the operation had been done previous to my first case—strictly, I mean, for the purpose of curing constipation.

DR. DALTON AND THE NEW YORK PATHOLOGICAL SOCIETY.

By JOHN C. PETERS, M.D.,

NEW YORK.

Our distinguished ex-President, Dr. John Call Dalton, belonged to a very progressive medical family. His father was an excellent physician who trained his sons well. His brother, Dr. Edward, became eminent, and John greatly increased the family renown.

He graduated in medicine from Harvard in 1847, and immediately commenced a thorough study of practical physiology and comparative pathology. Before his time physiology had been largely speculative; he made it practical mainly by his great skill in vivisection. Some of his methods were destructive and seemed cruel, but they tended most surely to the welfare of the whole human and animal race.

He had rare gifts for such pursuits, and was equally expert with pen, pencil, scalpel, and microscope. He was also a great teacher; his lectures were finished discourses, always delivered in the most clear, graphic, and impressive language; his pamphlets are masterpieces; his text-books models of their kind; his larger works all became classical. His management of chemical, philosophical, and more dread apparatus was as dexterous as that of a magician; and very difficult experiments were always made with the ease and certainty of a conjurer.

He was preceded in his abstruse studies by Magendie, Claude Bernard, and others in Europe, but he was the pioneer of vivisection in this country, and was forced to be its public champion, year after year, before the Legislature, in order to save it from the bitter assaults of its malignant enemies. He was so small in stature and seemingly so delicate in frame that our great aldermen and assemblymen looked down upon him, at first with contempt, but finally in great admiration that so much bravery, wisdom, and eloquence could proceed from such a quaint and fragile little body. He was so strong in his science and his honesty, and such a master of convincing language that he swept away all factious opposition like idle wind. And when he showed them that all his seemingly cruel experiments could be carried out under the beneficent influence of anæsthesia, they promptly refused to declare his wonderful work either inhuman or unlawful. Thus the great lovers of sport became the great defenders of science.

He joined this Society in 1853, quickly took a great

lead in some of our most intricate and scientific work, and became one of our most earnest, precise, ingenious, and successful laborers. Of course our highest honors were soon showered upon him; he often represented us before other learned bodies, was elected Vice-President in 1857, and President in 1859, when he was only thirty-four years old. Some of the best beginnings of his great fame were made in our halls; some of the earliest as well as the latest plaudits which cheered him on in his toilsome but splendid career came from our voices; we were always ready to act as his shield and safeguard in the times of his greatest trials; and we were his willing stepping-stones, first to a professorship, and then to the Presidency of the College of Physicians and Surgeons. Need we add that he remained the warm and generous friend of this Society down to the last days of his busy life, and that we should cherish his name and fame among our most precious treasures.

He was a very earnest, honest, and industrious man. His honesty and industry made up the greatest part of his life and his religion; they were his greatest charms and strength. His was no slip-shod, nor yet a rough-and-ready search after truth, but a patient and relentless hunt. He tested and re-tested every step of his progress in such painstaking and varied ways that there was little chance left for error; and when Dalton announced a discovery we all knew it would never be entirely overthrown, or its great principles completely swept away. When he confirmed the discoveries of others we were satisfied. His researches extended from the very beginnings of life in the most insignificant creatures up to the completest functions of the most perfect men and animals. Graafian vesicles, hydatids, tapeworms, and Surinam frogs were traced through all their curious metamorphoses with the genius of an Ovid. He was a bachelor and wrote learnedly about ovaries, and then gave us the best book on the human brain that has ever been published.

Like Mr. Lincoln his face was not comely to look upon, and scarcely indicative at first view of his rare powers. It was not like a "white and alabaster image of his grandfather," but more like that of a yellow, sandy Scotchman, with a little flavor of his loving and canny little favorite companion. But to those who knew him well it gradually became charming; and his light, easy, graceful, and active body was not "a bale of cadaverous goods."

His manners were so unobtrusive that few strangers ever realized that he was a man of great force in large affairs; of much renown and still greater achievements; had long borne heavy responsibilities with great honor, and had completed great and varied enterprises both successfully and felicitously.

He could unbend occasionally and be a very pleasant and witty companion; but his delicate health long deprived him of almost all social pleasures. He bore his sufferings bravely and uncomplainingly, and we were somewhat prepared for his death, but our sorrow now is none the less.

The hands of death have fallen heavily upon us. The shades of Sands, Agnew, and Dalton still seem near by; and those of Clark, Flint, and Post not far off. They have gone out into solemn silence, and no real voice or sound can come from them. But they all had prosperous and beautiful lives, happy and spotless names, calm deaths, and immense fame. They were kind friends, teachers, and benefactors; they had an unceasing tribute of applause and admiration; love and sympathy follows them, and many and honored memories cluster around them.

THE SUSPENSION TREATMENT OF LOCOMOTOR ATAXIA has been recently widely advertised, both in lay and medical journals. Brilliant results are claimed for it in Charcot's clinic at Paris, where fourteen cases were treated with decided amelioration of symptoms. The reports suggest the "brilliant" results, as some time ago reported, of nerve-stretching.

NOTES REGARDING THE MANAGEMENT OF CHRONIC GASTRO-INTESTINAL CATARRH.

BY W. W. VAN VALZAH, M.D.,

NEW YORK.

(REPORTED BY CHARLES R. CRANDALL, M.D.)

THE object in reporting the following typical cases is to call attention to practical methods. The principles and methods set forth are comparatively simple, yet, as will be seen, they are sufficient to afford good results. Having proven to be of real merit in many instances, it is hoped that their utility will be more generally recognized, so that they will gain an established place in medical practice. Surely, whatever tends to help the physician in the cure of obstinate diseases, and is also capable of bringing relief to patients who have long experienced intolerable suffering, is worthy of recognition.

Chronic Catarrh of the Stomach.—Mr. H——, aged twenty-nine, of good family history, exemplary habits, and a lawyer by profession. In boyhood he lived in a malarious climate, and suffered more or less from fever and ague. At a very early age he began to show symptoms of indigestion, with which he has been troubled more or less ever since. Eight years ago serious symptoms of acidity of the secretions of the stomach, accompanied by pain and flatulence, began to develop. About three hours after eating he would have severe epigastric pain, a sense of burning and distress, followed by eructations of gas and sour fluids. Four years ago he had what was diagnosed to be an attack of acute catarrh of the stomach, attended by a great increase of all his former symptoms. During this attack he was sick in bed three weeks, and several weeks more elapsed before he regained his usual health. The chronic condition became so bad that he was obliged to make a radical change in his business and mode of living, and therefore engaged in "ranching" in Colorado. In this new and invigorating life he had an abundance of fresh air and exercise, and, as a result, was benefited. But, at best, he suffered more or less from catarrhal disease of the stomach, despite the fact that he guarded himself in every way and lived mostly on a regulated diet, such as he had found was best for him. He had already discovered that an animal diet, composed mostly of eggs and beef, agreed better with him than anything else. The trouble from which he suffered seemed to be limited to his stomach, for during all the years of his troubles his bowels remained in good condition. Last summer he had a brief run of what is known as "mountain fever," which prostrated him very much. As soon as the fever began to break, he had an attack of "catarrhal inflammation of stomach and bowels." As may be inferred, these conditions greatly aggravated the chronic diseases from which he had long suffered intolerable misery. In addition, prolonged suffering from gastric catarrh, repeated severe acute attacks, and mal-nutrition, all tended to break down his nervous system and give rise to alarming symptoms, such as great mental depression, headache, wakefulness, and irritability. It should be stated also, as a matter of fact, that during all these years he was under medical treatment more or less, and had sought health in every possible way. When he presented himself for treatment in October of 1888, he had a pale, tired look, was thin in flesh and very much debilitated. He complained of the nervous symptoms above described, and of pain and distress in his stomach, especially after meals. His tongue was coated, his appetite poor, and there was pain and tenderness over his stomach. He also had marked naso-pharyngeal catarrh. His bowels were in fairly good condition, but greatly distended with gas. Microscopic examination of his blood showed that it was in quite good condition. There was an almost entire absence of morbid products. Such was to be expected, for the blood does not show abnormal products to any extent in catarrhal disease of the stomach. It is during catarrhal, or long-standing functional and catarrhal, diseases of the bowels that the blood contains a large amount of the products of

fermentation and decomposition. This is owing to the fact that yeast-germs, and various alkaloidal products of decomposition are absorbed through the villi, lacteals, and blood-vessels of the intestines, whereas in the stomach the veins and arteries are the only means of absorption of normal and abnormal products. Urinary analysis showed a large quantity of biliary coloring matter in the urine, phosphates in excess, and a specific gravity of 1.032. Repeated examinations were made during the entire course of treatment. This was done for the purpose of ascertaining how he was digesting his food, and also how the liver and kidneys were doing their respective work. It is the only scientific means for finding out whether the work done in the body is good or bad. After the regulation of the diet, and the adoption of sufficient liquid, the urine was gradually changed and a normal condition was established.

Treatment was begun by an effort to gain control of the mental state of the patient, with a view of inspiring courage and hope, and gaining full co-operation. To insure nerve and brain rest, he was directed to take a long rest both before and after meals, and to go to bed early at night and get all the sleep possible. He was advised to drink a pint of hot water an hour and a half before meals and before retiring at night. The object of this was to stimulate secretory and excretory glands, dilute and wash the mucus from his stomach, "flush out" the kidneys, and keep the urine down to a specific gravity of 1.015–18. All starchy and saccharine foods were forbidden, and nothing allowed in the way of nourishment but an animal diet. At first only a few ounces of the muscle-pulp of beef, or beefsteak, were permitted at a meal. The amount was steadily increased, however, until he took twelve ounces or more at each meal. After about six weeks very small quantities of starchy food were allowed, and their effect constantly watched. In such manner he was gradually brought around to a more varied and mixed diet.

The medicines employed consisted of small doses of liquor hydrastia et bismuth before meals, pepsin after meals, and a small piece of rhubarb to insure one free movement of his bowels daily. For his general debility, which was increased at first by the withdrawal of his customary foods, he was given twenty or thirty drops of aromatic spirits of ammonia, or else one tablespoonful of good whiskey in water, three or four times daily.

This line of treatment was persisted in for week after week, his naso-pharyngeal catarrh was duly treated and cured, and he was carefully watched and advised from day to day. As a result, there ensued a prompt disappearance of acidity, flatulence, and distress in his stomach. His nervous system righted up so that he soon began to sleep well, all despondency passed away, and he became hopeful and cheerful. In a few weeks he also began to gain strength and flesh, and a good, fresh color.

Now, after four months, he enjoys good health, has gained nearly ten pounds in weight, is much improved in every way, and, with care in regard to his diet, will keep perfectly well.

Chronic Catarrh of the Bowels.—Mr. W——, aged forty-five, of steady habits and good family history. He spent his early life on a farm, and was healthy and large. Later he engaged in confectionery business and pursued it for a number of years until his health failed. Fifteen years ago he noticed that his general health was declining. Farther along naso-pharyngeal catarrh developed, accompanied by a steadily increasing cough. He then began to seek medical treatment, and went from one physician to another, but obtained no satisfactory help. His whole system seemed involved, and there was doubtless a formidable array of symptoms, for he was informed at one time that his lungs were diseased; again, that his trouble was with the heart and kidneys. This state of affairs went on for seven years. About this time it was discovered that he had a tape-worm, and one was forced away that measured seventy feet. For a while his health remained very poor, but ultimately it improved, and for three years he was better. Then he began to suffer greatly from acidity, flatulency, pain, and so-called inflammation of the stomach. His food did not seem to distress him in a marked degree, but he suffered greatly from distention caused by the gas that accumulatd in his stomach and bowels. He was informed by his physicians that he had "wind dyspepsia." During the last three years he has been severely troubled by gas in his bowels, and by constipation. Every little while, however, he would have attacks of diarrhœa, which was, doubtless, nature's method for relieving the pent-up condition. After he had had several attacks of diarrhœa he made the discovery that the discharges contained a large quantity of what appeared to him to be the coating or lining of the bowels. In other words, he passed thick, tough, stringy, organized catarrhal mucus, which is a common thing in such cases. Besides, the gas and material passed from his bowels were highly offensive, indicating the degree of decomposition and fermentation that was taking place. The gas eructated from his stomach had also the same offensive and disgusting odor. During the years he thus suffered there was a steady decline in strength and flesh; his weight, which had been nearly one hundred and sixty pounds, fell to one hundred and twenty-six pounds, and he became so weak that he could scarcely walk. His family and friends thought that he could live but a short time, and he himself was utterly discouraged. He gave up his business, being too sick to attend to it and not expecting to live. During the long term of years that he was sick he travelled more or less for his health, and had, at different times, the care of ten well-known physicians. These facts are mentioned to convey an idea of the duration, severity, and obstinacy of his condition.

When he came under the following treatment, which he did a year and a half ago, he was thin in flesh and very pale and weak. He complained of despondency, headache, "full-headedness," ringing in his ears, and constant distress in his bowels. His bowels were moving several times daily, and discharging a great amount of gas and thick, tough mucus. At times there would be exfoliations of casts of the bowels, which looked like the lining or mucous surface. Microscopic examination of his blood showed that the red corpuscles were pale, poorly nourished, and shrunken. There were also present a great quantity of mycederma aceti, one of the absorbed products of fermentation. Urinary analysis revealed the presence of considerable biliary matter, and an excess of urates. The urine was dense in appearance, and had a specific gravity of 1.030. Abdominal inspection and percussion discovered general distention from gas, and decided tenderness over the large bowel. This was especially apparent under the constant current of electricity, not alone over motor points, but over the entire bowels.

At the outset of the treatment an effort was made to re-establish a healthy mental state. In the management of such cases it is always of first importance to gain the confidence of the patient, and thus secure cheerful help on his part. He was carefully guarded against physical and mental fatigue, in order to give the bowels rest and save all the nerve-force possible. In addition he was directed to restore a healthy action of the skin by means of stimulating baths, and by friction taken daily. The use of hot water internally was adopted at once, and he began by taking a glassful an hour and a half before meals, and upon going to bed. This amount was steadily increased until he took a pint four times daily. The effect of this was to thin and dissolve the catarrhal secretions, cleanse the stomach, bowels, and kidneys, and help to prevent excessive fermentation. Besides, it increased the volume of liquids in all the tissues of the body, acted as a mild stimulant to all of the emunctories, and thus favored the elimination of morbid material, the natural result of chronic fermentation and deficient oxidation. At times it caused what can be best described as "scourings" or "cleanings," during which the bowels acted more freely,

and discharged large quantities of "sloughed off," stringy mucus. These "clearings" became less frequent, and in time mucus ceased to appear in the stools. The restricted animal diet was also adopted in this case, and consisted at first of small quantities of the muscle-pulp of beef, tender beefsteaks, lean mutton chops, game, and the whites of eggs. He was allowed, farther along, a very small amount of starchy food, with the direction to limit the quantity, or to discontinue it altogether, if it caused gas in his bowels. To offset the sense of extreme debility he felt at times, he was given either twenty drops of aromatic spirits of ammonia, or one tablespoonful of the best whiskey, well diluted, four times daily. As an aid to digestion he was given pepsin, to take after meals. For a nerve-tonic a combination of tincture of cinchona, fluid extract of stillingia, and fluid extract of damiana was prescribed. Later, whenever his liver became sluggish, or his bowels constipated, he was directed to take, at bed-time, a pill composed of a grain and a half of wild cucumber, one-third of a grain of calomel, and one-half a grain of extract of hyoscyamus. The object was to produce one good free movement.

After being on this treatment a few weeks he began to improve, and the symptoms of dyspepsia, fermentation, and diarrhœa steadily disappeared. The discharges from the bowels gradually became natural in consistency and frequency, showing that intestinal digestion was going on normally. Several months later he began to gain flesh, and his weight has now increased to one hundred and fifty pounds. His strength has correspondingly increased, so that he is able to be about all day, attending more or less to business. Discomfort from food is practically unknown, unless he eats too much, especially of starchy foods, thus causing fermentation. By guarding his diet and using hot water he gets along nicely, and is comparatively well. He was under treatment a year and a half. It usually takes from one to three years to cure such cases, much depending upon the severity of the disease.

Remarks.—In perusing the histories given above it has doubtless been noticed that in the management of each case great effort was made to form an accurate diagnosis, and to obtain a thorough understanding of existing conditions. While it is true that subjective symptoms and physical signs were recognized, they were, nevertheless, made secondary to the accurate determinations obtained by repeated study of the blood, the urine, and the fæces. Therefore, in addition to the means ordinarily employed, very frequent microscopic studies of the blood were made; the urine was examined chemically from day to day, and often microscopically; and the character of the fæces inspected as often as seemed necessary. In the treatment of such cases a daily thorough investigation of excretions and products is, in the highest degree, essential. It is the only means of accurately determining to what extent patients are digesting their food, to what degree the liver and kidneys are doing their work, and just what quality of blood is being made. There is no other way for obtaining clear, definite, and reliable results. It must ever be borne in mind that the only way of learning how an organ is doing its work is by frequent and careful study of its products. Morbid organs must inevitably form morbid products. The one is cause, the other is effect. With accurate and comprehensive knowledge thus obtained for a basis, every means of treatment must be subsequently employed that promises aid in effecting a cure. It is a mistake to believe that any one thing, be it food, drink, medicines, rest, or change, will accomplish satisfactory results. There must be, from first to last, the employment of all rational means and methods that tend to remove causes, to restore the healthy action of every organ, to improve the character of the blood, and to build up the nerve-power.

The next step in the management of these cases was the removal of causes that maintained unhealthy action and disease. It would be folly to use space for the purpose of enlarging on the fact that chronic gastric or chronic intestinal catarrh, "twin scourges of humanity," is invariably caused and perpetuated by something or some condition that is constantly acting. In the great majority of instances this something is unhealthy and improperly digested foods. As a rule, these foods are undergoing morbid changes in either the stomach or bowels, or in both, and perpetuating and augmenting disease. A process is in constant operation that is not only keeping up irritation and excessive secretion of mucus, but also generating abnormal elements which take the form of "gases," "ferments," "ptomaines," or "alkaloids." These are absorbed into the blood, carried into every part of the system, and work their deleterious effects upon organs, muscles, and nerves. Hence comes the primary importance of dispensing with every food that does not digest properly. As is well known, the foods most liable to undergo fermentation and cause gastro-intestinal catarrh are those of a starchy and saccharine nature, as, for instance, bread, oat and corn meal, rice, pastries, potatoes, beans, and, in short, most of the vegetables. These are the foods that, in many persons, cause acidity, fermentation, and irritation, and thus keep the alimentary tract more or less filled with abnormal fluids and gases. All foods of this class were looked upon as causes in the foregoing instances, and were therefore more or less rigidly excluded from the diet for days and weeks, and even months. Inasmuch as prompt relief followed their exclusion, it is reasonable to believe that they had been the cause of the miserable effects that had long prevailed. The complete exclusion of starchy and fermentable foods is an interesting feature, owing to the fact that such exclusion is completely contrary to the usual methods of treating such cases, starchy foods being generally relied upon and an animal diet excluded. Indeed, nearly all authorities have claimed that persons having gastro-intestinal catarrh should be dieted on starchy and saccharine foods, and omit animal food entirely. In such manner they have been dieted on the very articles and elements that are the chief causes of fermentation, and the disease perpetuated instead of cured. It needs no argument to prove the absurdity of trying to cure chronic fermentation with fermentable foods. It needs no logic to explode the sheer nonsense of feeding patients on oat meal, then washing it out of the stomach in a few hours, sour and undigested, and then feeding the patient again with the same material. This is being done in New York at the present time. On the other hand, the patients referred to were persistently guarded against starchy foods, were fed for a long time exclusively on animal foods, which are non-fermentable, and were promptly relieved and eventually cured. It was not the desire to place these patients arbitrarily on a particular diet, but rather on one that they could digest and assimilate. Thus far, after several years of trial in my practice, an animal diet has been found to yield incomparably better results than any other, and for this reason it was employed. It was, of course, essential to ascertain from time to time if it was being properly digested, and this was done by a careful study of the blood, the urine, the fæces, and all other symptoms, according to the methods already mentioned. It would be impossible to state too strongly the importance of frequent and thorough study of the above-named products, and of all relevant symptoms connected with the case. The fact that these patients, and hundreds more who have been similarly dieted, were eventually cured, tends to demonstrate that an animal diet is the most easily digested, and that it contains all the potential elements needed to meet the demands of the system. The great thing is to have the stomach and bowels thoroughly cleansed by copious quantities of hot water, and then to allow the patient only as much animal food as can be digested. When used thus it agrees with nearly all cases, enables the organs to regain their power, improves the quality of the blood, and restores the tissues of the entire system.

Another essential feature in the treatment of the cases alluded to was the long-continued internal use of hot

water. As stated before, it was given for the purpose of supplying to the system a sufficient quantity of liquid, stimulating the secretory and excretory glands, diluting and washing out the excessive catarrhal mucus collected along the intestinal tract. It is simply impossible to cure catarrhal diseases of the stomach and bowels so long as their surfaces are covered with tough mucus, yeast-germs, and excremental filth. These decomposed and deleterious products must first be washed out, and then kept washed out, by a free and methodical use of hot water. This methodical use must be regulated by the intelligence and judgment of a physician who has a definite purpose in view and knows how to accomplish his purpose. In the treatment of these cases it is necessary to continue its use for a long time. It requires months, and in some instances even two or three years, to cleanse the digestive tract and the blood of their morbid contents. It is, indeed, not saying too much in claiming that the free use of hot water is an inseparable and invaluable adjunct to this radical method of curing chronic diseases.

In regard to the use of medicines but little need be said. Those employed were simple and of well-known character, and were used to meet urgent indications. On them but little reliance was placed, farther than to meet certain temporary needs. In short, they were used only so far as they promoted the appetite, aided the digestion, augmented the tone of the nervous system, and stimulated or checked secretions. In catarrh of the stomach and duodenum specific medicines sometimes do direct good, but below these points their effects are practically *nil*. But it is safe to say that no single means or medicine can effect the cure of these long-standing and desperate conditions. There must be not only rational exclusion of *every well-known element of causation*, but also the adoption of *all measures* calculated to restore function, and build up the blood and the general system.

In conclusion, the results obtained in the instances cited, and in scores of cases besides, tend to establish three important facts:

1. That the majority of cases of gastro-intestinal catarrh that "go the rounds" in vain and become the bane of medical practice, are entirely curable.

2. That prolonged use of from one to two quarts of hot water daily is in no sense injurious, but, despite all conflicting statements to the contrary, is, when given with precaution for a definite purpose, and according to well-established scientific guides, one of the most grateful and useful remedial means that can be employed.

3. That an animal diet, properly selected and prepared, is the best tolerated, the most easily digested, and the most promptly absorbed of any diet thus far known. When the rules and methods above stated have been observed, it can be used for months and years without occasioning the slightest harm. In no sense does it tend to cause gout, rheumatism, or Bright's disease, as is sometimes ignorantly claimed. In connection with the diseases above described, its great utility is to tide the patients over until they can live well and comfortably on a diet composed of two-thirds animal and one-third starchy food, which is the normal proportion.

THE "BELLY BAND" FOR THE NEW-BORN.—Dr. Ady (*Pacific Medical and Surgical Journal*) believes that the "belly band," however made, is a relic of barbarism—uncomfortable and mischievous, often causing and never preventing hernia. The inguinal region is the weakest part of the abdomen. Instead of protecting this the band, on the contrary, forces the intestines down into it. Even if the umbilical opening has not properly closed, the pressure of the band about the circumference of the body will only crowd a knuckle of intestine into the aperture and effectually keep it open, instead of allowing it to close, which it will generally do if left to itself. He would, therefore, advise that all bands, skirts, etc., that punish the baby be left off.

Clinical Department.

SUPRAPUBIC CYSTOTOMY IN A CASE OF OBSTRUCTIVE SENILE HYPERTROPHY OF THE PROSTATE GLAND.

BY G. T. RICHARDSON, M.D.,

CHARLESTOWN, W. VA.

ACCORDING to Reginald Harrison, hypertrophy or enlargement of the prostate gland is a condition which affects one-third of the male population [of the world?] who have passed the age of fifty-five years. And if it be true that there are "no known means of preventing it," the announcement may be accepted with complacency by the other two-thirds, but will be looked upon as a rather lugubrious greeting to the coming man. However this may be, there are few medical men, I imagine, even among the non specialists, of any considerable experience, who have not encountered this enemy of the aged strongly entrenched. The following case presented some features which have not come under my observation before:

G. E——, seventy years of age, suffered with irritability of the bladder during the latter part of the summer of 1888. His condition grew steadily worse under a self-instituted treatment with patent medicines, and in October reached the culmination of a well-established cystitis. He had not up to this time made formal application to me for treatment, and when I proposed to examine his prostate, and hinted at surgical interference, he decided to try the "Safe Cure" a while longer.

Finally, at four o'clock A.M. on December 25, 1888, after weeks of great suffering, which had well-nigh exhausted his power of further endurance, he was seized with a fit of retention, and sent for me.

Before proceeding to catheterize I made a careful examination of the prostate, which I found considerably enlarged, but not greatly so, at least not in the direction of the rectum, and I could not make out any inequality in the lateral lobes. In attempting to introduce the catheter—an ordinary silver one, No. 11, American scale—I encountered a stricture in the membranous portion of the urethra, which was passed after a while, but the obstacle beyond was utterly impassable. I called a consultant, and we both tried with a series of smaller instruments, but failed to enter the bladder.

The distention was now very considerable, and the suffering of the patient extremely great; so without further delay I aspirated above the pubes, taking about a quart of water. This brought relief and sleep—brief indeed, but still the first he had enjoyed for many hours. Returning before the bladder had become again distended, I made another attempt to introduce a catheter, but with no better success than before. So I now determined to desist from these worse than useless efforts to enter the bladder through the urethra, and to rely upon the aspirator instead. Accordingly, about five hours after the first aspiration a second was performed, and then a third, and so on for two or three days, and yet there was no improvement. I proposed cystotomy, but he strenuously opposed the operation, and was ably seconded by his wife, and the aspirating went on, with a rapid lessening of the interval between times, and a fearful increase in the vesicular irritability and tenesmus, due no doubt in part to these numerous punctures, until at last, seeing that my patient was surely failing, and believing that to pursue such a course any longer would amount to gross malpractice on my part, I refused to aspirate another time; and, with the tardy acquiescence of the patient and his wife, I performed the operation of suprapubic cystotomy after the plan recommended by Dr. Hunter McGuire (see *Virginia Medical Monthly* for October, 1888).

The drainage-tube introduced after the operation produced so much irritation that I removed it in about two hours, and never used it again.

The wound and parts around were kept clean by frequent spongings with carbolized warm water; and after each sponging the wound was covered with a small piece of absorbent cotton saturated with mercuric chloride solution 1–1,000, and over this a larger pad. This completed the dressing.

Everything went on well until the third day (January 10th) when the temperature rose to 103°, and there was marked tenderness and redness on the right side of the abdomen, extending from the wound upward and outward about five inches.

The patient had lain on his right side a good deal, thus favoring the filtration of urine into the tissues, and this was no doubt the cause of the trouble. But it soon passed off under a change of position and the application of a stronger solution of carbolic acid. On the eighth day after the operation the sutures were removed. On the fifteenth the urine passed naturally through the urethra, with only a little spirt through the fistula at the beginning of micturition. On the eighteenth day the patient was up and walking about the house, and, though weak from the severe ordeal through which he had passed, declared he had not felt so well for six months, and the opening in the bladder was nearly closed. I had intended to keep it open for some time longer as a safety-valve, but every unpleasant symptom having subsided, and the patient expressing great anxiety to be relieved of the inconvenience of having a "hole in his belly," I did not insist upon it. I saw him last on the first of February. The wound had been completely closed for several days. He could retain his urine three or four hours without discomfort and pass it without trouble, and there has been no unfavorable result thus far.

The space penetrated by the aspirating needle covered a surface area about the size of a silver quarter.

In operating this space was bisected, revealing a congested and blackened condition of the tissues down to the bladder itself. And this condition no doubt favored the cellulitis set up on the third day. For this reason so many punctures ought not to have been made. The cystotomy should have been done earlier. But in private practice the surgeon is no autocrat, and is often hampered and thwarted by the whims or ignorance of his patient. So in this instance relief was refused except by means of the aspirator. Now it was practically impossible to introduce the cannula through the same track each time, and I found the plan of leaving it in the bladder gave rise to the danger of still further and more seriously wounding the mucous coat of the collapsed viscus by the sharp point of the instrument.

The aspirator is indeed a boon in retention when catheterization is impracticable; but the relief it gives is only temporary, and it must be regarded as a poor substitute for free drainage in all cases in which residual urine is a factor. It will be observed that the catheter was not brought into requisition after the first three or four ineffectual attempts to introduce it. And so without any irrigation of the bladder—save by the overflow and free escape of the healthy urine itself—without any prostatotomy, without any catheterization, the bladder and the prostate and the urethra, after a complete rest of less than thirty days, have regained a nearly healthy condition. If further trial establishes the fact that suprapubic cystotomy can be relied on to accomplish such results it will have a brilliant future.

SUICIDE IN FRANCE.—The total number of suicides in France during the year 1887 was 7,572, of which 2,168 are attributed to mental afflictions of different kinds, 1,228 to physical suffering, 975 to domestic troubles, 800 to drunkenness, 483 to poverty, 305 to pecuniary difficulties, 208 to the desire to avoid imprisonment, 100 to the loss of employment, 89 to the fear of exposure, 56 to the loss of relatives, and 25 to the dread of military service. Among the other causes specified in the returns, 227 suicides are put down to jealousy and crossing in love.

A MEDICO-LEGAL CASE, IN WHICH THE NEEDLE OF AN ASPIRATOR WAS PLUNGED PAST THE RIGHT PLEURAL CAVITY, THROUGH THE DIAPHRAGM, AND INTO THE LIVER, WITH FATAL EFFECT.

BY J. M. BALL, JR., M.D.,

WATERLOO, IOWA.

CASES of alleged malpractice, in which an aspirator is the instrument producing death, are extremely rare; so rare, in fact, that after a prolonged search the writer has been unable to find a single recorded instance. A case which merits the title of this paper has just been tried a second time in the district court, convened in this city, and has attracted great attention in local medical circles. The first trial was had in February, 1886, and in each instance a verdict was returned in favor of the plaintiff. The present paper is written with an honest desire to benefit the profession, and to sound a note of warning in regard to an operation which so many of the faculty are called upon to perform, and in which the possibility of producing harm seems rarely to have entered the operator's mind. The petition of plaintiff sets forth that the defendant is a practising physician in Waterloo, Iowa; that said A—— R——, in April, 1885, being in feeble health by reason of malarial poisoning, employed the defendant in his professional capacity; and that the defendant accepted such employment, thereby tacitly agreeing to bring to the treatment and relief of the deceased a reasonable amount of professional skill.

The plaintiff further alleges that the defendant made an incorrect diagnosis of the case; and decided "that it was necessary and requisite to the treatment of said R—— that a certain surgical instrument known as an aspirator should be inserted into the body of said R——. And plaintiff alleges that the use of said instrument was unnecessary and without reasonable excuse. That, therefore, and in pursuance with his determination, the defendant proceeded and did insert into the body of the said R—— the instrument aforesaid. That said instrument was by the defendant ignorantly, unskilfully, carelessly, and negligently inserted and used; the liver, diaphragm, and peritoneum of said R—— thereby wounded and cut; great pain and suffering inflicted upon said R——; and that therefrom said R—— did thereafter, and on or about April 28th, 1885, die." Damages were asked in the sum of five thousand dollars.

In his answer to the petition of the plaintiff, the defendant "denies that the use of the aspirator by himself, in making a diagnosis of the disease of which the said R—— was ill, was wrongful, or without warrant or excuse therefor.

"That, as to whether said instrument caused great pain and suffering of the said R——; as to whether the liver, diaphragm, and peritoneum were punctured or cut by said aspirator, the defendant has not sufficient information to form a belief as to the truth thereof, and asks that such allegations be taken as denied."

The undisputed testimony shows that A—— R——, a farmer by occupation, and thirty-eight years of age, was a strong, robust, and healthy man on December 24, 1884, at which time he started on a journey to visit friends in New York; that he was absent about ten weeks, and that while absent he contracted a severe cold which settled on his lungs. In March, 1885, he consulted a physician, who told him that he was suffering from malarial poisoning. Dr. —— was first called to attend the deceased on April 20, 1885. He found marked dulness over the right side of the chest, extending downward from a line drawn horizontally across the right side, and about one inch above the nipple. The doctor expressed the opinion that his patient was suffering from pleurisy. Some remedies were prescribed, and the defendant returned home. This was on Monday. On the following Thursday the doctor returned with an aspirator, and proposed to aspirate the right pleural cavity for diagnostic purposes.

This was consented to by the patient. The doctor did not have counsel, and the persons who assisted in the operation were laymen. The aspirator was used, but no fluid was found. Immediately thereafter his breathing became rapid and difficult, and great pain, which was paroxysmal and frequently recurring, was complained of in the right hypochondriac region. In twenty-four hours he was delirious, and his abdomen tympanitic and swollen. At 4. A.M. of the following Tuesday the patient died. The needle of the aspirator used was found on measurement to be one millimetre in width, and three and one-eighth inches in length, from the eye to the shoulder.

The post-mortem examination showed that the thoracic organs were normal, except the lower lobe of the right lung, which was the seat of hepatization. The abdomen was tympanitic, and showed evidences of diffuse general peritonitis. The superior surface of the right lobe of the liver presented a wound about one and one-eighth inch in length, and varying from one-eighth to three-sixteenths of an inch in depth. Between the superior surface of the liver and the under surface of the diaphragm, and adherent by plastic exudation to the latter, were several flattened clots of blood each about the size of a half-dollar. The diaphragm, at a point corresponding to the wound in the liver, presented evidence of an intense inflammation.

The conflicting testimony is in regard (1) to the seat of puncture of the chest-wall, and (2) to the depth to which the needle was introduced.

1. The defendant swore that he inserted the needle at the sixth intercostal space, on the right axillary line. A gentleman present swore that "the puncture was about two inches below and a little to the right of the right nipple."

2. The defendant stated under oath that he first introduced the needle about an inch, and then turned the stop-cock of the aspirator; then, obtaining no fluid, he pushed the needle about half an inch further with a similar result. The testimony of the spectators leaves it doubtful as to the depth to which the needle was inserted.

Verdict.—At the first trial the Court instructed the jury that, inasmuch as the plaintiff had introduced no testimony to show the value of the deceased's life, damages, if found at all, could be merely nominal, such as six cents or one dollar. Jury found for plaintiff in the sum of one dollar. Verdict was set aside by the Court as unwarranted by the evidence. At the second trial the jury found for the plaintiff in the sum of fifty dollars.

Remarks.—The operation of thoracentesis is of great antiquity, being mentioned in the writings of Hippocrates, Galen, Paulus Æginetæ, and Celsus. It was performed by them for the relief of empyema, but the operation, as applied to cases of hydrothorax was not performed previous to the first part of the seventeenth century.

Among the important questions bearing upon the preceding case, and on which the experts were requested to enlighten the jury, are the following. They are appended for the benefit of the reader, and may furnish food for thought.

I. "Do you know of any cases on record in the medical text-books where the surgeon, in attempting to remove an effusion from the pleural cavity, has plunged his instrument through the diaphragm, into the liver, with fatal effect?"

Answer. Donaldson, in "American System of Medicine," vol. iii., p. 533: "Aran plunged a trocar into the liver when operating through the same point," viz., the seventh intercostal space. Aitken, "Science and Practice of Medicine," vol. ii., pp. 673 and 674, edition of 1866, says: "The most appropriate spot for puncture is between the seventh and eighth, or eighth and ninth, or ninth and tenth ribs, in a line let fall from the lower angle of the scapula; but as a rule, let the trocar be introduced as low down as possible, consistent with the safety of important organs in the chest or abdomen. *The exact position of the liver and spleen must be determined first in every instance* (italics mine). Laënnec himself once transfixed the diaphragm and pierced the liver, and that through the *fifth* intercostal space. An enlarged liver or spleen may be detected as high as the fifth rib. Dr. Watson once witnessed an operation, in which the trocar was pushed through the diaphragm into the spleen, which was unusually large. The patient died a day or two later of peritonitis." . . . "The point of the instrument should be raised rather than depressed, so as to avoid injury to the diaphragm, liver, or spleen."

II. "Supposing a needle three inches long be inserted into the sixth intercostal space, over the right side and on the axillary line, and at a right angle to the chest-wall, what important organs would such a needle pass through or injure, assuming the parts to be in their normal position?"

III. "Would it be possible in your opinion to produce a wound, one inch in length and one-eighth of an inch deep, by means of the needle of an aspirator introduced at right angles to the body, for a distance of three inches, into the seventh intercostal space on the right side, assuming the organs to be in their normal position?"

IV. "What is the distance from the sixth intercostal space on the mid-axillary line of the right side to the nearest point of the liver, assuming the parts to be in their normal position?"

V. "Assuming the needle of an aspirator to be inserted at the sixth intercostal space of the right side, passing through both layers of the pleura, through the diaphragm, and through both layers of the peritoneum, would it be possible to produce, in the convex surface of the liver, a wound one inch in length and one eighth of an inch in depth?"

A PECULIAR CASE OF DETACHMENT OF THE RETINA.

By F. E. D'OENCH, M.D.,

NEW YORK.

THE following case of detachment of the retina possesses some points of interest which seem to render it worthy of being put on record:

Michael B——, aged forty-five, came to the German Dispensary with the complaint that the sight of his right eye had rapidly failed during the last two weeks. That of the left had been poor for more than two years. An examination of the right eye revealed an extensive detachment of the retina, involving the outer portion and extending beyond the macula lutea toward the optic nerve, the fovea centralis appearing as a dark-red spot in the detached retina. The peculiar feature of this case, however, was found in the presence of numerous small, white dots scattered throughout the detached portion, but most numerous near the periphery, apparently of the size of a pinhead or less in the ophthalmoscopic image, and not confluent. The whole presented a picture like that of an astronomical chart, in which the stars are represented by dots of varying magnitude. The patient had perception of light in the detached portion, the detachment, as already mentioned, being a very recent one. The tension was normal. Cases of this kind have been observed before, but they are of rare occurrence. Leber[1] mentions them, together with other peculiar changes, but does not give any explanation of their formation. Other references to them I have not been able to find.

In the absence of any histological examination of such an eye we can only conjecture as to the nature of these dots; it is probable, however, that they are the result of some acute degenerative process. In conclusion I might add that neither albumen nor sugar was found in the urine.

DYING SONG TO ELECTRICITY BY CRIMINAL.—"I'm Going 'Ohm to Dynamo."

[1] Graefe: Saemisch's Handb., vol. ii., p. 684.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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PASTEURISM AND THE PALACE OF HYDROPHOBIA.

THE extraordinary *éclat* attending the recent opening of the Pasteur Institute in Paris has been duly chronicled by the press, both secular and medical. It is certainly a pleasing reflection that so much money could have been raised for purely scientific purposes. The study of bacteriology will doubtless receive a further strong and healthy impetus from the erection of the vast and perfectly equipped laboratories connected with this biological institute. The French government alone has allotted the sum of $25,000 a year to defray the current expenses of this magnificent workshop of experimental research.

But, as regards the more specific purpose of this Institute, namely, the practice of Pasteur's anti-rabic inoculations, the question seems an allowable one: "Is the game worth the candle?" On this score even France has its doubters, although everyone knows that the Frenchman is much given to exuberant self-praise in all that pertains to "*la gloire de la patrie.*"

In a recent issue of the *Journal de Médecine de Paris*, the editor, M. Lutaud, boldly attacks the very essence of Pasteurism in relation to the prevention of rabies. It may not be generally known to our readers that Dr. Lutaud is the arch-enemy of the Pasteur system, having indeed written an entire volume in denunciation of the practice. It seems but fair to make this statement, as there are always two sides to every controversy. The journal cited above has remained silent for many months, and it appears that this has been construed by M. Grancher, the chief assistant of Pasteur, as an admission of defeat. It is in order to refute any such notion that the editor has now returned to this subject.

There is one glaring fallacy in likening anti-rabic inoculation to vaccination for the prevention of small-pox. It is this: Vaccination is practised before the invasion of the system by the virus of small-pox. But in hydrophobia a poison is introduced into a body already supposed to be infected with a similar virus.

Quite apart, however, from this consideration, what are the actual results of anti-rabic inoculation? Certainly the efficacy of Pasteur's method is not to be judged by the figures published by his school. M. Grancher is roundly accused of juggling with numbers to such an extent as to make his claims appear utterly unreliable. The great mistake the Pasteurites make, is to consider all bitten subjects, who present themselves for treatment at the Institute, as infected with hydrophobia.

Now M. Lutaud claims to have kept an accurate record of the deaths due to rabies, both before and since the Pasteur system came into vogue. These would show that rather more persons succumb to the disease now than formerly. And it is highly probable that some die in consequence of the treatment they are subjected to, who would have survived if left unmolested. Altogether the Pasteur system makes a very poor showing, when thus exposed at the hands of a hostile critic.

But, as already intimated, every controversy has two sides. Those who uphold the Pasteur doctrine quote figures, which, if reliable, put the matter in a decidedly favorable light for the advocates of anti-rabic inoculation. The *Times* gave a summary recently, of what M. Grancher had said relative to the progress of this system.

It may be remembered that human beings were first inoculated with Pasteur's attenuated virus in 1885. Up to July 1, 1888, 5,384 persons had been treated in Paris. In 1886 the number inoculated was 2,682, in 1887 it was 1,778, and in the first six months of the present year it was 914. The rate of mortality in the first year was 1.34 per cent. It fell to 1.12 in the second year, and in the first half of the present year it was only .77. The mortality that furnished these rates included the deaths of persons in whom the poison had become developed when they were subjected to treatment. It has been estimated that before Pasteur's method was used the mortality was about 16 per cent. of the persons bitten.

There have been established seventeen branch laboratories. Seven of these are in Russia, five are in Italy, and each of five other countries—Roumania, Austria, Brazil, Cuba, and the Argentine Republic—has one. Nearly 4,000 cases have been treated in these branch institutions. At St. Petersburg 484 have been inoculated, with a mortality of 2.68 per cent. The number of those treated at Odessa has been 1,135, the rate of mortality under the mild treatment in 1886 having been 3.39, while in the two following years, under the "intensive" treatment, it fell to .58 and .65 respectively. In Havana 170 were inoculated, with a mortality-rate of .6 per cent. The high rate of mortality in Russia is accounted for by the fact that many of the patients had been bitten by mad wolves.

This then is the other side. For our own part we shall wait for further developments, believing that it is impossible at present to say positively either that Pasteurism for hydrophobia is a glaring fraud and gross imposition, or that it is one of the greatest boons yet conferred by medicine upon suffering humanity. There is a final thought that suggests itself to us. We have now a "Palace of Hydrophobia," although rabies claims but few victims every year. Will not some generous charity soon give us palaces of diphtheria, of scarlatina, of typhoid, and other possibly preventable diseases, that still swell our mortality lists to unnatural dimensions.

ASTHENIA AND NEURASTHENIA.

A correspondent of the *Boston Medical and Surgical Journal*, Dr. Philip C. Knapp, has furnished to that journal voluminous etymological evidence to the effect that the accent in neurasthenia should be upon the penult. A

professor at Harvard has even been called in to help fix the accent on the i. We commend the learned gentlemen for their scholastic efforts in behalf of the penult. The dictionary authority for neurasthenía is sound; we have not denied it. But common usage is greater than etymology, and is the final arbiter.

The later lexicographers, like Stormonth and Thomas, recognize this, and put the accent in anasthenia and sthenia on the antepenult. The eminent Harvard professor and his esteemed coadjutor do not seem to be aware of this fundamental principle of orthöepy. Such is the penalty of growing up with wax in the ears; perhaps, following their own rules, they still say Alexandría, and vertígo. The eminent professor who cannot understand how asthenia can come from σθενος would do well to consult Stormonth and Thomas, who give such an etymology, and whose modest lexicographical works contrast not unfavorably with Professor Goodwin's textbook for school-boys wishing to learn the rudiments of Greek.

We trust that our Boston friends will get over their Passion for the Penult, with maturer years and larger aural experiences. The tendency of modern usage is to throw the accent back, and such words as asthenia and neurasthenia will not have their accepted pronunciation changed by the sciolistic efforts of closet philosophy. Neurasthenía is the language of the provinces.

"What did the doctor pronounce your ailment?" inquired she, with a tremor of anxiety in her tone, as she came into her husband's sick-room.

"He pronounced it as if it were spelled bronkeetus," exclaimed the indignant Bostonian, straightening himself up in bed, "and I requested him at once to make out his bill and go."

THE SIGNIFICANCE OF PEPTONURIA DURING PREGNANCY.

The presence of peptone in the urine of pregnant women may be taken, according to Dr. Koettnitz, to indicate the death of the fœtus. This conclusion he bases on the observation of three cases in which the occurrence of peptonuria was followed by the expulsion of dead products of conception (*Allgemeine Medicinisch Central-Zeitung*).

It is well known that peptone appears in the urine in conditions accompanied by the disintegration and absorption of albuminoid bodies, notably the leucocytes. Similar conditions are present in the case of the death of the fœtus in utero. It is to be remembered that the liquor amnii is itself an albuminous fluid, and the fœtus is, of course, largely composed of albuminoid bodies. The amniotic fluid tends to macerate and decompose the dead fœtus, the placenta also dies off, and hence we have the absorption of bodies that lead at once to the appearance of peptone in the urine.

In the normal puerperal state peptonuria is never observed. The author also failed to discover this symptom in the case of a pregnant woman afflicted with chronic nephritis.

It is to be hoped that others will be able to confirm the significance of peptonuria in pregnancy, for this would then give us a valuable diagnostic sign that is at present often wanting, especially where the death of the fœtus takes place in the earlier stages of pregnancy.

News of the Week.

Dr. A. L. Loomis explains his Relations with the Late Dr. M. N. Miller.—Dr. Alfred L. Loomis was examined on Monday in accordance with the order obtained from Judge Freedman of the Superior Court, to enable Mrs. Margaret Alden Miller to make out her complaint in the suit against him, as administratrix of her husband, Dr. Maurice N. Miller. Mr. Francis L. Stetson, of the firm of Bangs, Stetson, Tracy & MacVeagh, appeared as counsel for Dr. Loomis. Mrs. Miller charges that her husband, who was employed at the Loomis Laboratory, did a great deal of work for Dr. Loomis in 1888, and especially that he prepared the greater part of a paper on "The Cardiac Changes in Bright's Disease," read by Dr. Loomis before the Association of American Physicians at Washington, in September, 1888. Dr. Loomis testified that Dr. Miller's work on the essay consisted in engrossing some tables and copying them afterward for publication. He did not revise it or do any original work on it. For the engrossing he was paid $25, and for copying for publication $10, although he said he didn't know as the copying was worth anything. Mrs. Miller's counsel had in court Dr. Loomis's original tables from which the engrossed copy was made, and the manuscript of the essay was put in evidence. It was all in the handwriting of Dr. Loomis or his wife. Dr. Loomis said Dr. Miller was paid $70 per month for his work at the Loomis Laboratory during ten months of the year. He collected the dues from the students, and accounts were settled about the first of every month. The settlement for November last was never made. Dr. Miller said early in December that he had a check for $680, and $180 in cash which he had collected for dues. Dr. Loomis took the check, but found he had no blank check to fill out for Dr. Miller's salary, and so told him to keep the $180 until the next day, when they would square accounts. He never saw Dr. Miller again, and when he presented the check for $680 at the bank for payment, he was told there was no cash to Dr. Miller's credit. It was apparent from Dr. Loomis's testimony that his relations with Dr. Miller had always been pleasant, but it was not pleasing to Mrs. Miller's counsel, as it showed that Dr. Loomis had written his own essay and prepared the tables for Dr. Miller to engross.

The New York Pathological Society, which has been wandering about a good deal, has now been obligingly provided with quarters at the College of Physicians and Surgeons. The accommodations are excellent, but the North River and Tenth Avenue are still rather out of the world.

St. Francis Hospital, New York.—A competitive examination for junior assistant will be held at the hospital, Tuesday, March 26th, at 11.30 A.M. For particulars address Dr. G. M. Edebohls, Secretary of the Medical Board.

A Society of Forensic Medicine has just been formed in Belgium.

The First Idiot Asylum in Italy.—An asylum for idiots has recently been opened at Chiavara (Liguria). This institution is the first of the kind established in Italy.

Dr. David Ferrier has been appointed Professor of Neuropathology in Kings College.

Gift to a Hospital.—Mr. John H. Converse, of Philadelphia, has given $60,000 to the Presbyterian Hospital of that city.

The Last New Treatment for Diphtheria is put forth by Dr. Arthur Hennig (*Berlin. Klinisch. Woch.*, February 18, 1889). Lime-water and ice-bags are the sovereign remedies against this pest of mankind, as it occurs at Königsberg, Germany.

Yellow Fever is stated to have broken out at Versailles, and to have numbered thus far four victims. It is suspected that the disease has been imported from South America by means of parrots, whose plumage may have harbored the contagium.

An Accommodating Medical Society.—The members of the Philadelphia County Medical Society are informed that any member who has an appointment to read a paper before the Society will have it set up in type and two galley-proofs furnished him on or before the day of the meeting, provided his copy is placed in the hands of the editor of the "Transactions" at least a week before the time it is to be read. If our County Society would help its members in a similar way, the plan would, no doubt, become popular.

Publishing Lectures without Permission of the Author.—On January 7, 1889, Judge Allison made a decree in Court of Common Pleas, No. 1, making perpetual the injunction which restrains Walter B. Saunders, a publisher of Philadelphia, from publishing and selling books on general and medical chemistry made up of condensations from lectures delivered at the University of Pennsylvania by Dr. Theodore G. Wormley, Professor of Chemistry and Toxicology in the Medical Department of that institution. The defendant is ordered to pay the costs of the suit.—*Medical and Surgical Reporter.*

A Proposed New Laboratory and Gymnasium for the Harvard Medical School.—At a special meeting of the faculty of the Medical Department of Harvard University, held on February 23d, it was announced that Dr. Henry F. Sears had offered to present the school with $40,000 for the purpose of erecting a pathological and a bacteriological laboratory. The matter was referred to a special committee. The plan proposed is to build a two-story annex to the present building, one story to be devoted to pathology and the other to bacteriology, and to fit up a gymnasium for the students in the basement.

Successful Removal of a Cerebral Tumor.—The first operation of this kind ever done in France was performed recently by Professor Pean. The patient suffered from Jacksonian epilepsy, and the tumor causing it was located in the upper motor region of the cortex by MM. Ballet and Gelineau. The patient is said to have been cured.—*Gazette des Hôpitaux*, No. 22, 1889.

Forty Thousand Anæsthetizations with Chloroform without a Death.—At the distribution of the prizes to the students of the Hyderabad Medical School, by the Duke and Duchess of Connaught, on January 25th, Surgeon-Major Lawrie, M.D., Principal of the Medical School, in a short address, referred to the commission appointed by the Nizam's Government to make experiments with reference to the effects of chloroform. This commission performed hundreds of experiments on dogs, and never found that the chloroform narcosis affected the heart until after respiration stopped. "This," adds Dr. Lawrie, "tallies exactly with my own experience. I have given chloroform as often, or oftener, than any man living, and have never had a fatal case; and I can state positively that in the 40,000 or 50,000 administrations I have superintended, I have never seen the heart injuriously or dangerously affected by it. I take no credit to myself in this matter. I have simply carried out in India the principles Simpson and Syme practised and taught in Edinburgh." In the hospitals attached to their school, chloroform was invariably given with absolute, or, he might almost say, with guaranteed safety by students, and they were never allowed to examine the heart beforehand, or feel the pulse during its administration. Chloroform seems to be especially well adapted to the Indian climate.

Lead-poisoning from Chrome Yellow used as a Cake Dye.—Dr. David Denison Stewart has collected seventy-nine cases of poisoning from the eating of cake dyed with chrome yellow. He says (*Medical News*): "It is to the point, in this connection, to state that I believe I can trace to lead-poisoning from dyed cakes many cases of disease of seemingly obscure or supposed idiopathic origin, seen in the past year and a half of my service in the out-patient medical department of the Jefferson College Hospital. Among these are cases of pronounced anæmia, renal fibrosis, peripheral neuritis, spastic paralysis, neurasthenia, obstinate headache, and, at least, one case of long-standing delusional mania." The popularity of sponge-cake in Philadelphia is on the decline. Dr. Stewart's latest report shows that it may cause heart disease and paralysis agitans.

Hardy's Method of Treating Itch, as carried out at the Hôpital St. Louis, is as follows: The patient is first of all subjected to friction with black soap and water for about twenty minutes. Then he is placed in a warm bath for an hour, during which he continues to rub himself and to soap himself. On coming out of the bath he is again rubbed over the whole surface of the body for twenty minutes, with a modified formula of Helmerich's ointment. This treatment lasts for an hour and forty minutes. Rubbing with black soap and the bath aim at cleansing the skin, softening the epidermis, and opening the fissures, and thus preparing for the action of the ointment which is intended to destroy the acari. After this treatment the patients dress themselves without drying the skin, and are advised not to remove the ointment for at least four or five hours. This prolonged contact is intended to insure the destruction of the acari, and especially to reach those which may have wandered on to the clothing; the individual who is thus covered with sulphuro-alkaline ointment is a veritable fumigating machine, exhaling sulphurous vapors. Nevertheless, to insure cure and to prevent the itch from being reproduced by the acari remaining in the clothing, it is better to pass through the vapor of sulphur the clothing which has been worn from the beginning of the disease, and completely to change the linen and sheets, and to burn any gloves which may have been worn.

A Large Fee.—A wealthy sugar manufacturer of Odessa, who died recently of typhoid fever, not being content with the five Odessa practitioners who were in attendance, sent first to Kief, for Professor Trichel, and finally, a few days before he died, to Vienna, for Professor Nothnagel, for whom a special train was ordered. It is stated that the fee given to the eminent Austrian professor was £1,500.—*The Lancet.*

Hunterian Orations.—There are various methods of securing medical or surgical immortality and of preserving one's name in perennial freshness throughout the lapse of years. None, however, is so practically and insistently effective as that of establishing a fund for an oration to be delivered annually upon one's life and character. Among the literary, oratorical, and scientific events of the year in London, for example, is the Hunterian Oration. Every season some new candidate is chosen to revive the memory of John Hunter and adorn it with the flowers of oratory, or the more sombre garments of philosophical reflection. It is interesting to note the ingenuity of successive orators in dealing with their subject. One year John Hunter is a great surgeon; the next year he is unsurpassed as a physiologist; and then we have him as a philosopher, a man of science, and a general practitioner. It is a good thing to be reminded of departed greatness, and to have such rugged and noble types as John Hunter occasionally brought to our attention. But we fear that our English brethren, under their perennial Hunter and Harvey orations, will, by and by, lose their feeling for true historical relationships, and think that ancient medicine was a binary compound of William Harvey and John Hunter. The facts are, with regard to Hunter, that his annual orators make ridiculous claims as to his influence on the development of surgery. He made no path-breaking discovery, and instituted no extraordinary revolution in surgical thought or method. He gave a tremendous impulse to scientific inquiry and better surgical methods, but such progress was part of the times, and was bound to come. There were great men before Agamemnon, and we should be glad if our London medical orators could in some years tell us about other not less notable worthies of medicine.

The Intercolonial Medical Congress and Disease in Australia.—The second Intercolonial Medical Congress was opened auspiciously at Melbourne, on January 7th. An address of much interest was delivered by Mr. T. N. Fitzgerald, President of the Congress (*British Medical Journal*). He said that in Australia there were three thousand medical practitioners, educated and trained in the same way as European medical men, and representing most of the schools in Great Britain and on the Continent. The conditions of life, he continued, in these colonies were different to what they were in the old country, and Australasia presented a new and wide field for medical and surgical observation. Although our habits and the conditions under which we lived bore a social similitude, yet they were by no means identical with those existing in Europe. The description of the sweating system was an incomprehensible revelation to the native-born of these colonies. With us food was plentiful and the hours of labor short, and summer and winter were much the same. The heat might at times be oppressive, but it could never be said to be unbearable or inimical to life. The causes which produced scrofula and tubercle existed here but to a slight extent, yet scrofulous impregnations were excessively virulent; while phthisis was as common with us as it was in England, and decidedly more so than in Canada and Scotland. The tertiary ulcerative forms of constitutional disease were comparatively mild affections here, and seldom presented that grave character which was such a continual source of anxiety to the European practitioner. Skin diseases were, however, not rare. Melancholia was a common form of insanity in our asylums. Alcoholic intemperance, tubercular deposits, and typhoid fever—scourges in the main preventable—swelled our mortality bills. Habitual drunkenness was an exception; but alcohol was not suited to our climate, for hepatic and renal troubles were sooner engendered by its use than in a colder country. Of the gravest consideration was it to discover how, in a country so richly endowed and with a climate so genial, we should yet be afflicted to so terrible an extent by two diseases such as typhoid fever and phthisis, both of parasitic origin and both eradicable. We seemed unable to cope with typhoid. Streets were marked out and houses were built without the semblance of drainage. Then when the warm weather came the fever stalked each year, more viciously and greedily than before. The colonial love of outdoor life and athletics developed muscular fibre, physical courage, and good temper.

Obituary.

JAMES W. RANNEY, M.D.,

NEW YORK.

Dr. James W. Ranney, of this city, died on February 26th, in the sixty-fifth year of his age. He was born in Townshend, Vt., in 1824, and received his early education at Middlebury College. After he left Middlebury College he came to New York, and was graduated from the Medical College University. He went back to Vermont and began the practice of medicine in Bennington. The prospect of a larger income soon induced him to come to this city, and about 1853 he first established himself here.

Politics had some charm for him, and within a year after his arrival in New York he was elected a member of the Common Council, which position, owing to the rapidly increasing number of his patients, he was soon obliged to resign. In 1860 he was elected Coroner, and served as such for three years.

Dr. Ranney made lunacy something of a specialty, and for almost twenty years, up to the time of his death, he was Lunacy Commissioner in this city. In almost every case of note of that character which has occurred here within eighteen or twenty years his opinion has been sought.

In the struggle between the Rev. John P. Newman, Pastor of the Madison Avenue Congregational Church, and his rebellious flock, Dr. Ranney took an active part, being violently opposed to Mr. Newman retaining charge of the church.

Dr. Ranney for twenty years has been surgeon and attending physician for a dozen or more railroads, and has done much valuable work in adjusting suits for damages against those roads with which he was connected. He was a Mason, a member of the County Medical Society, and a Fellow of the Academy of Medicine, and for a number of years had been physician for the Society for the Prevention of Cruelty to Children.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, February 1, 1889.

F. P. KINNICUTT, M.D., PRESIDENT, IN THE CHAIR.

DR CLEMENT CLEVELAND read a paper (see p. 261) entitled

STRETCHING THE SPHINCTER ANI AS A MEANS OF CURING CONSTIPATION.

In the discussion which followed,

DR. R. F. WEIR said that he did not quite understand how so slight an operation could have so striking an effect. He added that the mode of stretching the sphincter was an important matter. The old method of introducing the thumbs and stretching until they touch the tuberosities of the ischium, he had abandoned long ago. The better way was to stretch the sphincter in all directions.

Another point is that it is often wise to stretch the sphincter more than once, and in cases of fissure of drawing the knife across the fissure and severing some of the fibres.

DR. CLEVELAND said that his method of stretching was the same as that referred to by Dr. Weir.

DR. A. H. SMITH asked if the sphincter ever became exactly the same as before the stretching.

DR. WEIR thought that sometimes it did, and sometimes it did not.

DR. KINNICUTT had seen in children a hypertonicity of the sphincter ani, and he had thought that the accompanying constipation might be benefited by stretching the muscle.

DR. WEIR said that he recalled similar cases in which he had to assume that there was a fissure, owing to the hypertonic condition of the sphincter, but in only one case could he find it. Here there might have been simply a spasmodic condition.

DR. HUNTER said that he had never seen a case in which the sphincter failed to contract as firmly as ever a few weeks after the operation.

DR. GEORGE L. PEABODY presented a specimen of

ENORMOUS GASTRIC ULCER, WITH GASTRITIS.

The patient from whose body was removed the stomach that I show you this evening was a native of the United States, R. S—— by name, thirty years of age, and a taxidermist by occupation. He was admitted to the New York Hospital on September 10, 1888. He gave no morbid family history; he had been a beer-drinker for years, but had been totally abstinent during the previous three months. He had never had rheumatism or malarial fever. Ten years ago patient had a venereal sore, followed by suppurative adenitis, but no further symptoms. For three years patient had been been troubled with flatulence, water-brash, borborygmi, constipation, and epigastric pain after the ingestion of food. One week ago patient vomited blood, during a single forenoon, to the amount of two pints. The previous night he had taken a dose of salts. He knew of no cause for the hemorrhage. Since that time he had eaten regularly, without pain or inconvenience. He eloped after thirty-six hours, before any plan of treatment could be efficiently tried.

On October 30th he returned. Since leaving the hospital he has had constant epigastric pain. Pain is increased by the ingestion of food and vomiting is frequent, the vomited matter having a black color and apparently containing blood. Constipation is the habit. Movements are small, dark-colored (brown), and very hard.

Emaciation has been rapid during the past four months. Temperature, 99°; respiration, 24; pulse, 100.

His appetite, he says, is good.

Physical examination.—No cardiac or pulmonary lesion. Superficial hepatic area is enlarged, extending from fourth rib to a point one and one-half inch below the free border of the ribs. Splenic area is normal. There is marked abdominal tenderness on pressure, most acute at the junction of mammillary line and costal cartilage. No tumefaction can be felt. Patient is emaciated and anæmic. On October 31st he was put upon peptonized milk and infusion of condurango.

Urine.—Yellow, alkaline, 1.020. Mucus and phosphates. No albumen. Negative microscopically. His weight is ninety-five and one-half pounds.

November 1st.—Vomited matter was tested and found to contain no free Hcl. Vomiting is persistent. Brandy and nutritive enemeta ordered.

Complains of constant severe epigastric pain.

November 5th.—Daily washing of stomach with gastric syphon was commenced. At the first washing two quarts of fluid were withdrawn from stomach before irrigation could be begun. His pain has become so constant and severe that morphine is now given regularly at night, subcutaneously, one-fifth of a grain in quantity.

November 8th.—Weight, ninety-three and one-half pounds. Urine, amber, acid, 1.010, no albumen. Hyaline and granular casts. Urea, eighty-five gr. daily. Quantity, thirty ounces.

November 12th.—Acid. Dil. Hcl. ♏ xx.—t.i.d. Powdered pepsin, gr. xx. t.i.d.

November 17th.—Weight, ninety-seven pounds. Larger quantity of food is retained and epigastric pain is less severe. Diet consists of milk, eggs, and meat, which are borne well and apparently digested by aid of Hcl. and pepsin.

November 20th.—Patient has five diarrhœal movements daily. They are dark-brown in color, unformed, and of foul odor. Lead and opium pill, j., t.i.d., ordered.

November 24th.—Diarrhœa still present. Opium suppositories and powders of morphine, bismuth, and camphor have all failed to check it.

December 3d.—Patient is losing strength and becoming more emaciated daily. Stomach is very irritable and little food can be retained. At this time all medication addressed to the stomach was suspended. After the lapse of two weeks lavage was again begun, and he was then given trial meals consisting of protein substances. After the lapse of an hour or thereabouts the stomach-contents were removed by tube and tested for free hydrochloric acid, by the phloroglicin-vanillin test. The result showed no evidence of the presence of free hydrochloric acid. Diarrhœa is still unchecked. Hypo. Magendie, ♏ viij. is now required, q. 12 h.

There is an increased sense of resistance in the epigastrium at the right of the median line, but no tumor.

Lavage become again very painful to him, and after two such tests as that just described, with an interval of several days between them and with similar results, it was abandoned.

December 7th.—Patient is now suffering from catarrhal bronchitis and laryngitis. Vomiting begins almost immediately after effect of morphine wears away.

December 15th.—Marked œdema of the feet and ankles is present. A small abscess is forming in the right inguinal region.

December 18th.—Abscess opened and creolin dressing applied.

December 29th.—Patient has grown rapidly weaker, and has required narcotism to relieve his suffering. He has taken little food. Bronchorrhœa has become very marked, and there is apparent inability to expectorate mucus. Breathing became labored and shallow, and heart failed; at 2.50 A.M. he died. P.M. Temperature, 98° F.

Autopsy.—Organs normal, except as below.

Peritoneum contains three pints of milky fluid. Upper surface of stomach and under surface of liver are united by old adhesions; mesenteric glands enlarged;

kidneys showed signs of not very advanced chronic diffuse nephritis; stomach contained three pints of partially digested food. An ulcer is found involving entire length of lesser curvature to within half-inch of œsophagus, and extensively involving also the anterior and posterior walls of stomach. Ulcer measures along lesser curvature four inches, at right angles to this measurement seven and a half inches. Bottom is smooth, edges thickened, and undermined to a distance of one and a half inch in places. Ulcer is apparently healed. Through the base the under surface of liver is distinctly seen; mucous membrane of rest of stomach is thickened, and obviously in a condition of advanced chronic gastritis. Liver small, centres of acini pigmented; large gut also pigmented.

Microscopic sections, which Dr. James has been kind enough to make for me from different portions of the stomach, show it to be very extensively changed. No gastric tubules are visible, the whole thickness of the mucous membrane being invaded by myriads of young cells, which have made them unrecognizable. Indications of their former presence can be detected by a sort of arrangement of epithelium in parallel columns.

The interest in the case centres in the few symptoms of carcinoma that the patient manifested—constant pain, emaciation, intense anæmia, and death—as well as the absence of free hydrochloric acid; and also in the problematical etiology of so large a gastric ulcer as this—certainly the largest I have ever seen. The fact of his occupation, as a taxidermist, is of interest; may his frequent handling of arsenic have had to do with his malady?

Dr. Kinnicutt, in the discussion, said that an absence of free hydrochloric acid in such a case as had been described by Dr. Peabody, should be expected. There had been an extraordinary loss of the secretory structures of the stomach by ulceration, and Dr. Peabody had stated that the gastric tubules were with difficulty found in the mucous membrane which had escaped destruction. A positive diagnosis in Dr. Peabody's case seemed to him impossible.

Dr. J. West Roosevelt presented the history of a case of

CANCEROUS STRICTURE OF THE PYLORUS WITH DILATED STOMACH.

The point of interest had been the great difficulty of diagnosis on account of the peculiar position of the stomach.

Dr. Roosevelt referred incidentally to the fact that the

HEART APEX

was in the fourth intercostal space, instead of the fifth. He had observed this position of the apex in a number of cases of normal hearts.

Dr. Kinnicutt said that in very young children the apex beat, as a rule, was found in the fourth space, in or just outside the mammillary line. In adults, he thought there was no reason to believe that the location usually given, the fifth space within the mammillary line, was incorrect. In health, it might vary slightly, temporarily, from distention of the stomach.

Dr. Hunter, referring to the subject of stomach dilatation, reported a case of

ACUTE DILATATION OF THE STOMACH

after an ovariotomy. The dilatation came on within ten days after the operation, and it was not present when the abdomen was opened by the surgeon. The patient died, and the post-mortem showed a stomach filling the whole abdominal cavity.

Dr. Kinnicutt reported a case of

SPONTANEOUS DEPOSIT OF CHOLESTERIN IN THE URINE.

It had been shown that the oily particles so frequently seen in the urinary deposits of chronic Bright's disease often contained cholesterin in a dissolved state. The spontaneous deposit, however, of cholesterin crystals in urine was of extreme rarity.

He had recently found the crystals in great numbers in the urine of a patient with the following history. Mr. D—— had very recently been under his care, suffering from an acute attack of gastro-duodenitis. There was moderate jaundice, white stools, and on the second day of the illness a trace of albumen appeared in the urine, with casts both granular and hyaline, and biliary coloring matter. On the fourth or fifth day from the onset of the attack, very numerous cholesterin crystals were discovered in the urine, the examination being made a few hours after its voidance. The albumen, casts, and biliary matters gradually disappeared, but the cholesterin crystals continued to be found for several days after the complete disappearance of the former. The urine at the present time was quite normal in character.

Aside from the interesting phenomenon of the spontaneous deposit of cholesterin crystals, the occurrence of numerous casts, both granular and hyaline, in the urine of such cases as the above, was worthy of attention. The possibility, even the probability, of such a temporary morbid phenomenon in cases of retention jaundice, should be borne in mind.

The patient whose case had been narrated, had been under his observation for a number of years, and had never shown any symptoms of renal trouble. His urine had been examined two days previous to the above attack, and had been found to be normal in character.

Dr. Robert F. Weir presented specimens of

PHOSPHATIC CALCULUS REMOVED BY SUPRA-PUBIC SECTION FROM A MAN SEVENTY-NINE YEARS OF AGE.

The special points of interest were these: 1. The successful result of a cutting operation at an advanced age. 2. The ease which the clawing or rake-like action of the fingers gives in drawing the subperitoneal fat from behind the pubis upward, and in this way quickly and safely exposing the bladder without hemorrhage, after splitting the recti muscles in the median line, instead of cutting or tearing through the tissue. 3. That a drainage-tube was used with lateral decubitus for three days, and that the bladder opening closed in twelve days. 4. That iodoform mania resulted from the packing of the wound with a ten per cent. gauze.

It may be added that litholapaxy was abandoned after an ineffectual trial with the lithotrite, on account of a large pedunculated median prostate hypertrophy. The calculus weighed one hundred and eighty grains.

Belladonna in Shock.—Dr. William B. Bradner, of Warwick, N. Y., writes: "Dr. Cheever gives many excellent directions in answer to the question as to what we can do to relieve shock, but it seems to me that he overlooks one most valuable remedy, viz., belladonna. For over a quarter of a century I have used belladonna or atropine either to prevent shock, or to hasten reaction during shock. I usually give to adults $\frac{1}{50}$ grain of atropine hypodermatically, repeated if necessary, either with or without morphine, as the individual case seems to demand. To me atropine is an agent of the greatest value to hasten reaction, as its employment will often give a healthy glow from the death-like pallor, and a sense of increasing warmth for the cold surface."

The University of Lausanne.—The authorities of the Canton of Vaud, Switzerland, have decided upon the establishment of a university at Lausanne. A great impetus has been given to the work by a gift of $600,000 from a wealthy gentleman, M. Rumaise, with the specification that it be devoted to the advancement of higher education in the canton. The personnel of the medical faculty is said to be excellent, and clinical material is abundant, owing to the fact that a preparatory medical school, annexed to the faculty of sciences, has been in existence in Lausanne for over four years.—*Lyon Médical.*

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, February 25, 1889.

ALEXANDER S. HUNTER, M.D., PRESIDENT, IN THE CHAIR.

THE VALUE OF WATER IN MODERN THERAPEUTICS; A CLINICAL STUDY OF THE METHODS OF APPLICATION IN VARIOUS DISEASES, AND THEIR RESULT.

AT the last stated meeting of the Society Dr. Simon Baruch read a paper with the above title, and at its conclusion the Society voted to make its discussion the special order of this meeting.

DR. A. JACOBI sent a written communication, which was read by the Secretary. The subject, he said, was by no means new in medical literature; not even in American literature. He had used cold water extensively some dozen years, not only as a local application in inflammatory local swellings, but for the purpose of stimulating the circulation and reducing increased temperature. Among the most conclusive accusations raised against him, in an institution from which he succeeded in getting himself expelled nearly twenty years ago, when he was president-elect of the County Society, was the charge that he was guilty of using cold water in the treatment of sick children. This injurious consequence of its use in his case was evidently not attributable to the physiological action of water.

Dr. Jacobi referred to some of his papers on antiphlogistics published in THE MEDICAL RECORD, 1870, in which he urged the occasional use of cold water in scarlatina, variola, asphyxia, lobar pneumonia, acute heart disease, according to the methods so vividly described by Dr. Baruch, besides its local application in adenitis, local peritonitis, ophthalmia, etc. But at that early time he added that cold water was no panacea or remedy suitable for every age and condition. It might do harm. A baby should not have a really cold bath until it had developed the faculty of locomotion and the reactive power that came with it. On the use of water, particularly cold water, in the treatment of diphtheria, he had expressed his views in his treatise on the subject in 1880. In a paper published in THE MEDICAL RECORD, 1875, he urged the use of cold water as the principal antipyretic in typhoid, and also in another paper published in the "Archives of Pædiatrics," 1885. But in speaking of the use of water we were apt to think of it as cold. We should not, however, forget how beneficial it might be when hot. Hot water in many cases of gastric catarrh, hot water injected into the bowels in intestinal catarrh, in dysentery, and in general collapse, also the hot pack, were too beneficial to be overlooked.

DR. S. HENRY DESSAU thought there were a few places for the use of water which had escaped Dr. Baruch's attention. Water served an excellent purpose when given to infants as a drink when they cried for milk before meal-time. Notwithstanding that much had been said on the subject of recent years, infants were still much more likely to be overfed than underfed. The human race would grow up healthier if, instead of giving the infant milk every time it cried, pure water were given until sufficient time had elapsed between meals. Cold water in summer diarrhœa not only served to allay heat and dryness of the mouth, but supplied a want of nature created by the excessive intestinal discharges. He also believed in giving cold water plentifully as a drink in scarlatinal nephritis. The daily bath in infants was the best nerve tonic. It should be begun at the fourth or sixth month of age. At the end of the first year the bath could be of about 70° F., and in the summer of the normal temperature of Croton water. Gently and gradually submerge the infant. The proper treatment of laryngismus stridulus was application of cold water. In infantile convulsions occurring during the course of fever he used cold bath or wet sheet; if the convulsions were due to peripheral irritation, as dentition or overloaded stomach, he used the hot bath. He had also employed cold water in chronic diarrhœa of infants, as recommended by Dr. Messemer, and hot water enemata with a small quantity of bicarbonate of soda in sciatica of adults believed to be due to proctitis.

WATER HYPODERMATICALLY FOR THE RELIEF OF PAIN was also a procedure employed by Dr. Dessau with speedy and almost uniform success. It was, however, best adapted to the relief of pain of neurotic rather than of inflammatory origin, as in neuralgia, lumbago, sciatica, etc. It was injected neither cold nor warm, but at ordinary temperature.

DR. VINCENT ZOLNOWSKI agreed with Dr. Baruch and Dr. Dew regarding the physiological principles involved in the use of water, and also that the remedy was powerful for evil as well as for good, and its use should ever be guided by judgment. In every case a careful chemical and microscopical examination of the urine should be made, the lungs and heart auscultated, the liver examined, before determining upon the special character of hydropathic therapeutics to be employed. The treatment, even in the same person, should vary according to the condition of the circulation, the temperature, age, vital resistance. The atmospheric temperature should have its weight in deciding upon the degrees of cold or heat required. The remedy should be used on the judgment of the physician, and not on the caprice of the nurse or patient. Full baths, half-baths, douches, sprays, packs, sitz-baths, etc., were all good when properly applied, but all should be used with judgment and discretion. The physician who had proper physiological knowledge would attain the same result by different applications of the same simple, single remedy.

Water could be used as an antiphlogistic, sedative, excitant, tonic, derivative, and solvent; but the two general methods to be observed were its use as an excitant, or as a depressant. As an excitant it should be used quickly, and the degree of temperature proportioned to the degree of irritability to be overcome. The less the irritation, the lower the temperature used. The withdrawal of heat from the economy should be small in amount and correspond to the rapidity of its formation. It should be combined with friction of the surface.

The nervous system could be brought actively into play by hot fomentations, dry packs, or wet packs of long duration, followed by a cold half-bath of low temperature, a douche, or shower-bath of a few minutes' duration, succeeded by rubbings. With this method the active movement of the muscles was especially recommended to restore warmth.

The depressant method was of two qualities, antiphlogistic and sedative. In the antiphlogistic plan the heat should be withdrawn slowly, for by its sudden and rapid abstraction the nerves became irritated, reaction took place, and the changes in the deeper tissues were thereby increased. Moderate temperatures in such cases were to be used only until excitement was allayed, then lower ones applied. The temperature should be taken every two hours, and the process of half-baths, wash-offs, etc., repeated at every indication of a rise of temperature. The sedative method was recommended when the nerves were greatly excited. The low temperature was from 43° to 54° F.; the medium, 54° to 65° F.; the tepid, from 65° to 80° F.

The internal use of water as drink and enema acted mechanically. The author described some cases, the first being one seen by a number of eminent physicians in New York, who called it scleroderma. The man had during his life been troubled with disturbances of digestion, and constipation alternated with diarrhœa. In February, 1886, he began to have stiffness and pain in both shoulders and arms, and by April it had spread over the entire body, with great rigidity of abdomen, face, and neck, eyelids, cheeks, etc. The urine was 1.032, no albumen,

no sugar, loaded with urates. His weight had fallen from two hundred and nine to one hundred and sixty-three pounds. All who saw the patient thought his condition would rapidly progress to a fatal issue. Following the advice of the consultants, he first used electricity and gave arsenious acid; then had recourse to hydropathy alone, consisting in hot fomentations over the rigid parts, followed by half-baths of low temperature; massage with frictions of lanolin, subsequently of goose grease, which proved best. After pain disappeared hot fomentations were omitted, and warm baths of 105° F. employed, followed by douches of low temperature. At present pain had entirely ceased, and the hardness had become confined to the fingers.

The next case was one of extreme morphine habit, in a practising physician, who was cured by hydropathy in three months. The treatment consisted mainly of a cold falling douche over the head and spine, and for tympanites he wore constantly a wet bandage around the abdomen, and for insomnia at night, cold bandages from knees to ankles.

The next case was one of chronic articular rheumatism of long standing, the legs being moved by pulleys. He had been cured, and had had no return of the trouble for seven years. The next was one of marked neuralgia of left infraorbital nerve, cured in nine months. The cause of the neuralgia in this and two other cases was lithæmia.

Dr. August Seibert demonstrated the manner of washing out the stomach of infants, the method consisting in the introduction of a small, soft rubber tube down the œsophagus, allowing about half a pint of water to enter from a graduated measure connected with the tube by means of another rubber tube. The stomach was evacuated by siphon action, allowing the external end of the catheter to fall below the level of the stomach. One washing was usually sufficient to cure a simple disorder of the stomach arising from overfeeding, or where some of the food from one meal remained undigested to be mixed with the food of the next meal. In the next class of cases, those of chronic gastro-intestinal catarrh or enteric catarrh, a few washings, with regulated diet, would effect a cure. No medicines should be given. The third class took in cases of cholera infantum, twenty-eight of which he had had last summer, and cured twenty-six. The water employed was of a temperature of 104° F.

Dr. Ralph Parsons discussed the use of water in mental and nervous disorders. Its beneficial effect was not more striking than in some cases of maniacal excitement. Here the prolonged hot-bath was indicated, increasing in temperature from 95° to 105°, or even 110° F. But if prolonged several hours the temperature should be warm rather than hot. The head should be kept cool. This bath was indicated only in the strong. The warm bath at bedtime was often good in insomnia. Patients depressed physically and mentally were often benefited by the cold bath followed by manipulation. Proper reaction was more likely to follow the cold plunge or shower, when taken willingly, than when taken unwillingly or given by surprise.

Dr. Van Valzah pointed out certain precautions in the use of water, particularly in gastric and intestinal disturbances, and said that hot water promoted downward, while cold water favored upward, peristalsis. In catarrh of the stomach the water should be given, internally, an hour and a half before meals. A moderate amount of hot water stimulated thirst, more than the same quantity of cold water, in diabetes. A good indication as to the amount of water to be taken was the condition of the urine. This should be kept at about 1.016 to 1.018, and be not too high colored.

Dr. Wallian emphasized the fact that fever was a symptom, not a disease; that disorders of the human economy arose from overburdening certain organs, and failure of elimination of waste elements. The physician's duty was not simply the administration of drugs to cure disease, but to restore function by aiding elimination and correcting errors of living. The chief agent in elimination was water, and he deprecated the craze for antipyretic drugs in the reduction of the temperature. The weight of athletes had been reduced as much as six pounds in two hours by hastening elimination through the skin. Nothing was better in promoting the function of the skin than water. He did not believe cold water should be substituted for hot water in the treatment of typhoid.

Dr. W. F. Holcombe described the great benefit derived from the internal use of water and the meat diet in Bright's disease and gastritis, in his own person, and said that he had acquired the power, which he thought others might do, of evacuating the stomach at pleasure by regurgitation.

Dr. Hungerford, of Connecticut, gave an unfavorable experience with the treatment of gastric catarrh, in his own person, by the method just described by Dr. Holcombe.

Dr. Baruch made the final remarks, and referring to Dr. Jacobi's statement that cold feet contraindicated the use of cold water, said he disagreed with him, but means should be taken after its use to bring about reaction.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

A CASE OF ACTINOMYCOSIS HOMINIS—PASTEUR'S BRITISH PATIENTS—THE TRUE DEATH-RATE AMONG PERSONS BITTEN BY RABID DOGS—THE VOTES OF CENSURE ON SIR MORELL MACKENZIE—SIR MORELL MACKENZIE'S REJOINDER TO THE COLLEGE OF PHYSICIANS.

London, February 16, 1889.

The last meeting of the Medical and Chirurgical Society was entirely occupied in discussing the subject of actinomycosis. The discussion was introduced by a joint communication from Dr. Douglas Powell, Mr. Godlee, and Mr. H. H. Taylor, in which the history of a case of actinomycosis hominis was given. The patient was a boy, nine years of age, the son of a dairyman, who was admitted into the Brompton Consumption Hospital, under the care of Dr. Powell. He had been ill for four months, and had suffered from hectic symptoms, slight cough, and painful swellings on the right side of the chest; there was a family history of tubercle. The symptoms observed on admission were irregular fever, emaciation, and slight cough, attended with pain in the right chest. The physical signs noted were: enlargement of right chest, with local swellings, elastic and painful in the infra-mammary and lower postero-axillary regions; complete dulness over lower two-thirds of right chest, with annulled respiration, and vocal fremitus, and weakened voice sounds; displacement of heart, a short bruit being heard at the base; liver and spleen normal; slight enlargement of glands in right axilla and neck. Empyema was suspected, but no pus found on exploration. Fluctuation having occurred in the lower swelling, the latter was incised, and a further exploration of the pleural sac made. As the result, some semi-solid matter mixed with blood was removed; on examination, this proved to be a degenerated tissue teeming with the ray fungus.

Professor Crookshank gave a morphological report of the actinomyces fungus obtained from the case, and demonstrated that the supposed two varieties met with in man were in reality one and the same. Dr. John Harley remarked that he did not yet consider it as finally settled whether the micro-organism was the cause or the concomitant of the disease. Mr. Eve observed that Dr. Powell's remark that the present was the first case diagnosed in England during life was hardly correct, since he had himself published a case more than a year ago of

actinomycosis affecting the liver; the diagnosis was made during life, and subsequently verified by post-mortem examination. Dr. T. D. Acland thought it was probable, from what they had seen among the many specimens exhibited that evening, that when the disease was luxuriant it might be that the fungus was polymorphous. His English specimens, when shown to Israel and Koch, seemed to them quite anomalous, and it was worth consideration whether the fungi, as seen in England, and in Germany, were really of the same species. Dr. Markham Skerritt referred to a case of actinomycosis which had been under his care in the Bristol General Hospital in 1886. The patient was a man, twenty-eight years of age, and had nothing to do with cattle, being a house-decorator. The temperature chart showed large, irregular, daily oscillation, as in that exhibited by Dr. Powell. There were pulmonary and pleural symptoms at first, but the growth having penetrated the diaphragm and invaded the liver, the pulmonary symptoms became unimportant. After death, the lung was found to have become a structure of dense fibroid tissue, and the growths in the liver looked to the naked eye just like the actinomycosis of cattle. Dr. Skerritt said the disease would probably be found to be much commoner in men and cattle than was now supposed. Dr. Powell, in replying, acknowledged that he had overlooked Mr. Eve's paper, but said he had only claimed that his own case was the first in this country in which actinomycosis of the *lung* had been diagnosed during life. Mr. Godlee said the paracentesis for supposed empyema had done harm rather than good; the growth was very vascular, and when a small portion of rib had been excised, the boy would probably have died at once, if they had not had at hand means for quickly plugging the wound. The enlargement of the superficial veins round the tumor was remarkable, and indicated pressure, not only on the azygos system, but also on the superior and inferior venæ cavæ. Professor Crookshank discussed the microscopic characters of the specimens in several of the cases. In the German cases there was some variation in staining, which led him to think the organism was probably polymorphic. He considered actinomycosis was a common disease in cattle. Many cases were mistaken for "perlsucht;" many were disregarded. In man, also, some cases were probably overlooked.

From a return issued by the Local Government Board, it appears that 85 British subjects have been treated by Pasteur during the past two years. In 24 cases the dog was proved to have been rabid by the experimental test; in 44, the dog was recognized to be rabid by the veterinary surgeon; and in the remaining cases (17), the dog was only suspected of being rabid. In 4 cases the patient afterward died of rabies, and in 1 case died of rabies while under treatment. Professor Horsley, in a communication just made to the Epidemiological Society, states that the death-rate among persons bitten by dogs undoubtedly rabid averages fifteen per cent., and points out that in the same class of patients Pasteur has obtained a death-rate of only 1.36 per cent. Professor Horsley therefore regards the success of Pasteur's treatment as assured.

Sir Morell Mackenzie's book on the late Emperor Frederick continues to excite many comments. The author has been censured both by the Council of the College of Surgeons, and by the Fellows of the College of Physicians in Comitia assembled. Although Sir Morell Mackenzie lately resigned his membership of the latter college, the Registrar was directed to forward him a copy of the resolution of censure. A reply was received from the secretary of Sir Morell Mackenzie, to the effect that the latter took no interest whatever in the proceedings or opinions of the College of Physicians, and requesting Sir Henry Pitman, as the Registrar of the College, to desist from further intrusion upon Sir Morell Mackenzie.

To Quiet Crying Babies try a drink of water.

ELECTROLYSIS AND STRICTURE.

To the Editor of The Medical Record.

Sir: Drs. G. E. Brewer and W. R. Otis have published, in your issue of 23d ult., an open letter to Dr. Newman, in which they propose to settle the disputed point, as to whether "Electrolysis is of any value whatsoever in the treatment of organic urethral stricture, by having ten patients provided, five of whom shall be treated by his method, and the remaining five they will treat by dilating urethrotomy." These gentlemen should recollect that it has never been contended that dilating urethrotomy cannot produce a urethra of extended calibre, retaining such extension for a month or two; but, gentlemen of their school hold to the theory that electrolysis cannot be regarded as a curative agent in the treatment of organic urethral stricture. If, therefore, they desire that a strictly impartial investigation should be made by a committee of competent and impartial surgeons, let such committee submit the whole ten cases to Dr. Newman for treatment, and let them be examined after he reports them cured, and that will demonstrate without doubt whether or not his treatment is potent in its effects. Every one is aware that a urethra may be cut to the calibre of say 44 French, but the fact is not to be disputed that a urethra of 28 calibre, which will not contract after ten or twenty years, is all that is necessary. Nextly, the advantage claimed by electrical treatment is, that it is safe and pleasant; and surely any man will elect such if its results will be satisfactory, instead of submitting to a cutting operation painful in its character, attendant in some cases with considerable danger to life, and the recovery from which may entail weeks of confinement to the bed and house.

I repeat by way of emphasis what, according to the admission of Drs. Brewer and Otis is the disputed point, "Whether electrolysis is of any value whatsoever in the treatment of organic urethral stricture."

Your obedient servant,

A. D. C.

THE ABUSE OF ETHERIZATION—A PLEA FOR THE JUNIOR ASSISTANT.

To the Editor of The Medical Record.

Sir: The article on "Etherization," by Dr. Shrady, in The Record of February 23d, was timely, and full of good points. But wasn't he a little hard on the junior assistant? That individual, to be sure, has just graduated, but he has shown by his examinations that it was by his brains he obtained the position. The lot of the junior is not a pleasant one. He is the general subject for all the disagreeable duties of the house staff. He writes up the books; he analyzes the urine; he runs errands for the house and senior assistant; and, on top of it all, he has charge of the administration of the anæsthetics. The chances are that on his first day's duty he has this pleasant part to do. Is he assisted any by the other members of the staff? Not much—they enjoy his efforts to control the patient; they smile when he lifts the cone from the face for a few seconds, and remark one to the other, "He won't do that much longer: wait till he is pulled up by the 'visiting.'" They know it is coming, and consequently are delighted when the visiting surgeon remarks, in tones decidedly sarcastic, "Well, doctor, if you cannot get the patient under, let Dr. J. take the ether." Dr. J., the senior, steps up and, with a nonchalant air born from his six months' acquaintance with the cone, soon "drowns" the patient into insensibility. The next time the junior gives the anæsthetic he copies as nearly as possible the act of the worthy senior, and soon is an expert in "getting a patient under" quickly. Another thing that is conducive to this rapid method is the operating surgeon himself. How often does he rush in from an hour to an hour and a half late, and rush to the operating-room, with directions to the junior to hurry up and get the patient ready. Is it any wonder that the cone is pushed snugly over the nose and

mouth; that the doctor and all the available nurses sit on the poor creature who is down on the table? No; for the operating surgeon, the man whose word is law, has said "hurry up," and the junior is not going to have the honor taken from him if he can help it. Besides, he is on the look-out for the smile of approval which greets him if the patient does get under the influence of the anæsthetic quickly. Does this encourage the careful administration of ether in the junior's mind?

His troubles are not through yet, for every five minutes the house surgeon, on whose broad shoulders rests all the responsibility of the operation, even if his duties are not of that high order of things, inquires in stentorian tones, so as to be heard by all the assembled multitude, "How is she, doctor?" "Let up on the ether!" "A little more ether!" "Come, doctor, crowd your ether; she is going to vomit!" This, interspersed with orders directly the contrary from the operator, naturally confuses the unsophisticated man. Result—the patient, as a rule, comes out of the ether and begins to kick; a general rumpus follows; finally science conquers, and the operation is finished. I will not take up your valuable space with any more remarks on the subject, but let me add a few rules for the persons in authority:

1. Give the junior plenty of time to get the patient under the anæsthetic without "crowding."

2. Let the manipulator of the cone alone while the operation is going on, unless there is *need* of interference.

3. Give the patient a small hypodermic injection of morphine before the administration to prevent vomiting.

4. Do not imply that the junior is a fool, if the patient is not disposed to take the anæsthetic kindly.

A FORMER JUNIOR.

THE CAUSE OF RICKETS.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: It would be very interesting to know what opinions are held by physicians in various parts of the United States of America, on the question of the etiology of rickets. So far as I have been able to form an idea from conversations with visitors to this country, it would seem that in America rickets is not a common disease. The same seems to be true of Australia and New Zealand. It is probable, however, that climatic conditions may have some influence in other countries as with us.

In *The Lancet*, December 6, 1888, I stated briefly my view that rickets is due to any cause which interferes with the function of respiration; and preferably to bronchitis, broncho-pneumonia, and pneumonia. This view was the result of the experience of many years' observation and careful attention to this particular question of what is the chief cause of rickets, and was founded entirely upon clinical data. The question is one that is not in a satisfactory state at present, and possibly there are physicians in America whose opinions upon it would be both interesting and valuable. Yours obediently,

ROBERT LEE, M.D.

EARLY OPERATION IN CASES OF TYPHLITIS.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In common, doubtless, with many other practitioners, I have been much interested in your recent report of a discussion on the subject of typhlitis and perityphlitis by the Northwestern Medical and Surgical Society of New York, and which followed the reading of an excellent paper by one of the members—Dr. Jacobus.

Not to comment upon the question of the pathology of these inflammatory swellings in the iliac region which engaged somewhat the attention of the speakers, and which, notwithstanding all that has been said, I believe to be still unsettled, I desire particularly to refer to the manifest leaning of several of them to a very early operation in these cases. Indeed, we find this recommendation earnestly made by more than one member who took part in the discussion, on the ground that suppurative peritonitis from perforation, which is almost certain to occur, may thus be forestalled. Nor, in their view, does a moderate constitutional reaction seem to preclude the performance of the operation, since pus may be expected early to be present without being heralded by the more pronounced symptoms which, oftener than otherwise, attend its formation elsewhere in the system. Consequently, the rule of action fairly deduced from the expressions of these gentlemen is, that an inflammatory process, more or less emphasized by the presence of a painful swelling arising suddenly in the region of the cæcum, and which may be justly considered to come within the definition of the term typhlitis, or perityphlitis, should, unless a decided amelioration of the symptoms soon occur—say after forty-eight hours—be subjected to prompt and radical surgical treatment.

Now, without reflecting upon the propriety of this rule, which may or may not be well-founded in practical results, I simply desire to say that I have seen at least four instances where the tumor in the iliac region was exceedingly well defined and attended by constitutional symptoms of a high grade, where resolution gradually took place under the rest, saline, and opiate treatment, no relapses following so far as I have ever heard. One of these cases I recently saw in the person of a youth, twenty years of age. The inflammatory swelling was so prominent as to attract the observation and apprehensions of the relatives, who came for me on this account. The right leg was flexed, there was fever (103°), and the swelling hard and very painful, the decubitus being constantly dorsal. Accepting Bartholow's advice, which I had followed in other cases, I employed the sulphate of magnesia for its osmotic effect; this being promptly secured, the exhibition of morphia and the tincture of aconite, in moderate but frequently repeated doses, was resorted to. Recognizing, with others, the great value of the ice-bag under these circumstances, I nevertheless preferred in this case to apply the hot pulverized flax-seed poultices, which gave great relief to the inflammatory tension and pain. At the end of a week or ten days the symptoms had practically disappeared; only a localized but painless hardening at the site of the inflammation, and which was certainly diminishing, remained. In the other cases I had a similar experience.

It is only right to add, however, that several years ago I lost a case by suppurative peritonitis, having its origin in a painful tumefaction of the kind in question, which might have been saved by timely and intelligent surgical interference. At an autopsy, also, which several years ago I made for a friend who had diagnosticated differently, I discovered suppurative peritonitis caused by perforation of an abscess that had formed in the vicinity of the cæcum. But where to draw the line in our dealings with this malady "is the riddle of the Sphinx," and I very much question if Dr. Wylie's brilliant success, or the opinions expressed in the discussion above mentioned, will solve it to the satisfaction of the average practitioner, who, after all, will have to judge for himself the symptomatic import of such cases, wherein he is invested with a grave responsibility. HENRY K. LEAKE, M.D.

DALLAS, TEX., February 8, 1889.

DISEASE COMMUNICATED FROM THE HUMAN TO THE LOWER ANIMAL.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Reading an article in a previous issue of THE RECORD from Dr. J. J. Chisholm, of Baltimore, giving an account of a case of measles in a dog, contracted from his young master, brought to my recollection a somewhat similar case. The event is very recent, occurring in my practice during the past year.

About four years ago a patient came under my care for treatment for scrofula. The disease at that time had advanced to such an extent that exfoliation of bone from

various parts of the body had taken place, especially from ulcers of the scalp, tibia, etc. The bones of the nose were coming away, accompanied by much of the nasal tissue, producing a hideous appearance and offensive in the extreme. The patient was a married woman, no children, fifty years of age. The past two years she was absolutely unable to help herself, confined to bed all the time, and of course a great sufferer. She was very fond of cats, and kept one or two about the bed much of the time during the last year of her life. About fifteen months ago the cat which slept most of the time in bed with her became sick, moped about the room, with swollen eyes and purulent discharge from the nose, sneezing, and soon became a horrid spectacle and finally died, greatly emaciated. While this unfortunate feline was pining away, the patient had adopted another bedfellow of the same species; in about two months this cat sickened and died precisely as the former, with symptoms corresponding to those of its affectionate mistress and its hideous predecessor. Another was then taken in bed to be caressed and to die in about the same length of time, and with the same symptoms. The husband of this poor woman saw by this time the fatal effects upon the gentle mousers, but not willing that his wife should be deprived of any comfort in his reach, procured another famous "rat catcher" from a negro in the immediate neighborhood, and brought it to the now sinking patient, who soon fondled it into perfect acquiescence, and, as the shadows began to lengthen, it too manifested the same symptoms of nasal catarrh first, then swollen head, purulent discharge, sore eyes, cough, sneezing, emaciation, etc., until on November 20th last, the long-suffering woman died. That night the cat lay upon the hearth in a sort of comatose state, and lingered until the next day; it expired while the funeral cortege was moving off with the decomposing remains of its late bedfellow. This was the fourth victim in less than thirteen months. In visiting regularly at this house my attention was called to the little animals, as one by one they succumbed to the dreadful malady. Observing the symptoms closely, I can vouch for the truth of this case as one where disease from the human subject was communicated to the lower animal. Dr. Chisholm says, in substance, that while it is a well-established fact that diseases of the lower animals are frequently communicated to the human race, the converse is not so well authenticated.

W. C. McDUFFIE, M.D.

FAYETTEVILLE, N. C.

THE TREATMENT OF PNEUMONIA.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Having noticed that the fatality attending pneumonia in some parts of our country has attracted the attention and comment of non-professional, as well as professional, journals, with your permission I will give your readers an outline of the treatment which I have long used with most satisfactory results.

At present I shall have nothing to say about theory, but if any gentleman shall condemn my practice because it may seem to conflict with any theory, I shall in a future paper answer him, perhaps.

In general, the treatment of pneumonitis is very simple indeed. The great desideratum is an equable, constant temperature of the atmosphere of the patient's room. He requires nothing less than a warm-air bath, or a hot-air bath, from the earliest period of his attack until the lung inflammation has been subdued, and the fever has in great measure subsided.

The condition of the patient's skin must determine what degree of heat the air of his room shall rest at. In general, somewhere about blood-heat will be found the proper mark, but the conditions desired are a gentle perspiration from the entire surface of the body, and a respiration as free from labor and pain as may be. The patient should lie upon a couch removed from the door that is opened to admit attendants, etc., in order that no cold air may reach his lungs, and no covering save a sheet should be allowed him. In all cases the air of the room must be kept of sufficient warmth to prevent any chilly sensations. Thus it will be seen that the patient is immersed in a lung and a skin bath, which must be continued until the inflammatory, and the consequent febrile, stages have passed. This may be a period of a few hours only, or it may continue two, three, or four days; but when applied early this treatment usually aborts the disease in a short time. Whatever the duration may be, when it becomes evident that the active stage is passed, the temperature of the room may be slowly and cautiously lessened, while additional covering is as gradually put upon the patient.

When the patient is first denuded of his clothing (which should always be done when he is placed in the warm room, as above directed), the attendant should sponge him all over frequently with tepid water, until he begins to perspire. Cool drinks may be allowable, but warm are better. Ice and cold water should be excluded from the sick-room entirely.

Such are the conditions under which the inflamed lungs may, as a rule, be expected to recover health spontaneously.

And permit me to say that a wide departure from these conditions, at the behest of a fashionable clamor for fresh air, has given pneumonitis much of its terror.

Now, then, for the drugs necessary: Of course, at as early a stage as possible a purgative suitable to the condition of the patient should be administered, and if necessary repeated until effective. At the same time I would prescribe thus:

℞. Pulv. ipecac,
Sulphate quinine.....ää. grs. xvj.
Podophyllin..... grs. ij.

Mix and divide into sixteen powders (or pills if condition of patient's stomach requires). One to be given every four hours.

Should there be nausea, or any evidence of biliousness, I should add to the foregoing formula: calomel, grs. ij.

I most earnestly wish to call attention especially to the conditions above outlined—the absolute necessity of excluding cold air from inflamed lungs—and hope that some of the RECORD'S readers will test this matter for themselves and report results for the benefit of others. I can assure you that this is no new hobby upon which I am desirous of cantering into public notice, but a well-tried and, to me, a thoroughly proven improvement upon the ordinary mode of managing pneumonitis.

In hospital practice it will be easy to provide suitably heated wards, but in private practice it will often be found difficult to constantly and equably supply the proper degree of heat. To obviate this difficulty I have devised a portable room which answers the purpose. To any gentleman who may wish to have what little assistance I can give I will send plan of said room, and gladly reply to all inquiries which he may make.

J. N. LEE, M.D.

ALLEN, LA.

WHOLESALE DISSEMINATION OF SYPHILIS.—Professor Tarnowski, of St. Petersburg, says that a syphilitic woman who had come under his observation had succeeded in contaminating with syphilis no less than three hundred men within a period of ten months. This represents merely the primary transmission of the disease; it naturally takes no account of the syphilitic taint which would reach the offspring of the men who suffered. Thus from one source, that of an infected woman, an amount of syphilis was disseminated, and injury done to healthy persons, which it is scarcely possible to estimate.

New Instruments.

A NASAL DOUCHE CUP.

By LEONARD A. DESSAR, M.D.,

NEW YORK.

So much has been written regarding the danger of middle-ear catarrh from the use of nasal douches, as well as the inconvenience of applying them in the ordinary manner, that I have endeavored to construct an instrument which, to a great extent, obviates these disagreeable features.

It consists of a cup made of glass, the nozzle being made to fit into the nostril, and the fluid introduced into

the nose by inclining the head somewhat forward, the mouth being kept open. The illustration conveys a correct representation of the cup, which is about double the size of the cut.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 24 to March 2, 1889.

McKEE, JAMES C., Lieutenant-Colonel and Surgeon. By direction of the Secretary of War, granted leave of absence for two months. Par. 13, S. O. 44, A. G. O., Washington, February 24, 1889.

GREENLEAF, CHARLES R., Major and Surgeon. Will proceed from this city as early as practicable to Newport Barracks, Ky., to examine and report upon a proposed change in the location of the post hospital at the new barracks now in process of construction near that post; thence to Columbus Barracks, O., to examine and report upon the necessity for an addition to the hospital at that post. Par. 16, S. O. 43, A. G. O., Washington, February 20, 1889.

BYRNE, CHARLES B., Captain and Assistant Surgeon. Granted leave of absence for twenty-one days. S. O. 44, Headquarters Division of the Atlantic, Governor's Island, New York City, February 21, 1889.

OWEN, WILLIAM O., JR., Captain and Assistant Surgeon. By direction of the Secretary of War, relieved from duty at Fort Leavenworth, Kan., and will report in person to the commanding officer, Fort Gibson, Indian Territory, for duty at that post, relieving Captain C. N. B. Macauley, Assistant Surgeon, who, on being so relieved, will report in person to the commanding officer, Fort Leavenworth, Kan., for duty at that post. Par. 3, S. O. 48, A. G. O., February 27, 1889.

TO MAKE MILK DIGESTIBLE advise patients to sip rather than gulp it. The fluid will then have a chance to become intimately mixed with the saliva and not miss the first important digestive process. Nature teaches the babe to do this in the ordinary function of suckling, supplying the nutriment in small quantities for the purpose.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending March 2, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	6	2
Scarlet fever	359	43
Cerebro-spinal meningitis	3	2
Measles	395	19
Diphtheria	177	42
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

A COURAGEOUS WOMAN.—At Surugadai, in Tôkyô, lives Mr. Tanabe, a gentleman in easy circumstances. His mother, an inmate of the same house, has attained her sixtieth year, but, until quite lately, was a hale and hearty lady, much beloved for her virtues and esteemed for her accomplishments. The changes of these topsy-turvy times have not shaken her adherence to the faiths and fashions of ancient days. In her eyes the Japanese *samurai* still exists, though his name has been erased from the national ledger and his place usurped by inferiors. A few months ago, her wonted health began to fail. She was attacked by a disease formerly held fatal, and now known to be curable only by extreme measures. At the Hongo Hospital Dr. Sato told her that a severe surgical operation could alone save her life. Was it possible that a lady of her age should survive such a method of treatment? Dr. Sato said there was good hope, and after anxious consultation her family consented to follow his advice. The old lady at once became an inmate of the hospital. By the 24th ultimo, she had undergone the necessary preparation. Dr. Sato himself undertook the operation, in the presence of the chief surgeons of the Naval and War Departments and of the Imperial University. Two deep incisions in the bosom had to be made, and the assistants were about to administer chloroform. The old lady asked what was the nature of the medicine. Being told that its function was merely to deaden pain, she said that she had no need of such things. She had heard of anodyne drugs that send patients to sleep under the surgeon's knife. She preferred to remain awake. Among her friends of former days was a loyal soldier, by name Miyoshi. Fate willed that he should die by his own sword. He had disembowelled himself in her presence, and with a wide wound gaping in his bosom, had composed and written his death song. She had witnessed this thing with her own eyes. It was her notion of the example a *samurai* ought to set, and though a woman, she preferred to emulate such a spirit rather than to take refuge from pain in narcotics. With that she lay down, and bared her bosom to the knife. Dr. Sato proceeded with the operation. He made two incisions, about four inches each, in the form of a cross, under the left breast, and two smaller incisions above. From each wound a large abscess was removed, and twenty stitches were put in. During the whole process the old lady never made a movement or uttered a groan. Not until Dr. Sato asked whether she had suffered much pain, did she open her eyes and reply quietly that the cutting of live flesh is never without suffering. Her son, who was by her side throughout, would now have answered the various inquiries that had come by telegraph and messenger, but the old lady insisted on writing four letters herself to reassure her friends. Dr. Sato declared, as well he might, that he had never, in all his experience, encountered so much fortitude and power of endurance. The *Nichi Nichi Shimbun* tells the story as an evidence that the old *samurai* spirit survives in Japan.—*Japan Mail.*

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Original Articles.

THE ETIOLOGY OF CROUPOUS PNEUMONIA.[1]

BY GEORGE M. STERNBERG,

MAJOR AND SURGEON, UNITED STATES ARMY.

ACUTE pneumonia is now generally regarded by the leading clinical authorities and pathologists in this country and in Europe as a specific infectious disease. Green, in his article on "Inflammation of the Lungs," in Quain's "Dictionary of Medicine," says: "It is maintained by some observers that, like the specific fevers, it is due to a specific cause. Pneumonia, whilst differing from these fevers in not being contagious, resembles them in the typical character of its clinical phenomena, and to a less extent of its local lesion. The changes in the lung occurring in pneumonia cannot be induced by artificial injury of the organ, and it must therefore be admitted that there is something special in the inflammatory process."

This "something special" has been demonstrated by recent researches, and it is the object of the present paper to give a historical account of the development of our knowledge with reference to this specific infectious agent, and of the experimental evidence upon which the claim is founded that the micro-organism referred to bears an etiological relation to the disease in question.

Evidently, if pneumonia is a specific infectious disease, the micro-organism which causes it is widely distributed, and the development of an attack depends rather upon secondary predisposing and exciting causes than upon the accidental introduction of the specific agent.

It cannot be maintained that the disease, as a general rule, is transmitted from individual to individual, *i.e.*, by personal contagion. Clinical experience is entirely opposed to this view, although we have ample evidence that it may occur as an epidemic among individuals who are exposed to the same conditions of environment—as in jails, barracks, etc. Thus at Christiana, Sweden, an epidemic of pneumonia occurred in 1847 in the prison, during which sixty-nine of the prisoners were attacked. And again in 1866 and 1867, during a period of six months (December, 1866, to May, 1867), a similar epidemic was observed in the same prison—sixty-two cases. Other prison epidemics recorded are those at Frankfort in 1875 (seventy-five cases) and in 1876 (ninety-eight cases); at Maringen in 1875 (eighty-three cases) and in 1878 (fifty-eight cases); at the prison of d'Ansberg in 1880 (one hundred and sixty-one cases, with forty-six deaths, in a period of five months).

Again, we have numerous records of village epidemics and of epidemics confined to single houses. In outbreaks of this character, as in epidemics of typhoid fever, of cholera, and of yellow fever, there is a succession of cases occurring at different intervals, but it does not follow that these cases bear any direct relation to each other. On the contrary, everything indicates that, as in the diseases mentioned, in the presence of the infectious agent common predisposing causes relating to the environment, acting upon persons having various degrees of resisting power, induce attacks at various intervals; or, it may be that in the presence of the specific cause and predisposing influences an exciting cause, such as exposure to cold, alcoholic excess, etc., is the immediate factor in the development of an attack.

Without stopping to discuss further the facts relating to the epidemic prevalence of the disease under consideration, I call attention to the well-established fact that pneumonia prevails over a wide area of the inhabited surface of the earth, and that by far the larger number of cases occur independently of any recognized connection with previous cases, and often under circumstances in which such connection can be very positively excluded. And, on the other hand, the direct transmission of the disease by the sick to those most closely associated with them, as nurses, etc., if it occurs at all, is evidently a rare exception to the general rule.

We must then conclude, as stated at the outset, that if pneumonia is a specific infectious disease the micro-organism which causes it is widely distributed. As a matter of fact, the pathogenic micrococcus which, from the evidence now at hand, appears to be the specific etiological agent in acute pneumonia has been found in the buccal secretions of healthy individuals in various parts of the world—in America, in France, in Italy, and in Germany, and no doubt more extended researches will show that it is extremely common.

This statement may appear at the outset to make the view that the micrococcus in question is the cause of croupous pneumonia quite untenable. For, it may be asked, how is it that the individuals who have this micro-organism in their buccal secretions escape an attack of pneumonia? In the present state of our knowledge this question no longer presents any serious difficulties. We know, for example, that the pus-organisms—staphylococcus pyogenes aureus, albus, and citreus—are very frequently found in the buccal secretions, and on the surface of the body of healthy individuals, and that, although these micrococci are recognized as the cause of furuncles and of all sorts of acute abscesses, they only give rise to the formation of such abscesses under certain special conditions relating to the general health of the individual, or to a traumatism by which their introduction to vulnerable parts is effected. Again, the tetanus bacillus is a widely distributed micro-organism which has been found in the earth, and especially in rich loam, in various parts of the globe. But the hands of farmers and gardeners are constantly soiled with such earth, without their contracting tetanus. In this instance it has long been recognized that a traumatism is an essential factor in the chain of events which leads to the development of tetanus, and now we believe, on satisfactory experimental evidence, that it is not the traumatism *per se*, or the injury to nerves, or exposure to cold, which in certain cases gives rise to this infectious malady, but that the result depends upon the introduction of a specific infectious agent at the time the wound was received, or subsequently—the tetanus bacillus of Nicolaier.

In the case of the tubercle bacillus, also, it is extremely probable, in the light of our present knowledge, that this bacillus, in a living condition, not infrequently finds a lodgement in the mouth, upon the Schneiderian mucous membrane, or in the larger bronchial tubes of most individuals who live in populous communities. Here, also, the infectious agent is only one factor, although an essential one, in the production of the infectious disease. It must be introduced to the vulnerable location, and must find a favorable nidus in the tissues invaded. We have good

[1] Read at the meeting of the Medical Society of the State of New York, at Albany, N. Y., February 6, 1889.

reason to believe that in this, as well as in other infectious diseases, there are wide differences, inherited or acquired, in the susceptibility of the tissues to invasion when the infectious agent has been introduced to a favorable location.

In a paper read before the Pathological Society of Philadelphia, in April, 1885, in discussing the relation of my *Micrococcus Pasteuri* to croupous pneumonia, I say: "It seems extremely probable that this micrococcus is concerned in the etiology of croupous pneumonia, and that the infectious nature of this disease is due to its presence in the fibrinous exudate into the pulmonary alveoli.

"But this cannot be considered as definitely established by the experiments which have thus far been made upon the lower animals. The constant[1] presence of this micrococcus in the buccal secretions of healthy persons indicates that some other factor is required for the development of an attack of pneumonia; and it seems probable that this other factor acts by reducing the vital resisting power of the pulmonary tissues, and thus making them vulnerable to the attacks of the microbe. This supposition enables us to account for the development of the numerous cases of pneumonia which cannot be traced to infection from without. The germ being always present, auto-infection is liable to occur when, from alcoholism, sewer-gas poisoning, crowd poisoning, or any other depressing agency, the vitality of the tissues is reduced below the resisting point. We may suppose, also, that a reflex vasomotor paralysis, affecting a single lobe of the lung, for example, and induced by exposure to cold, may so reduce the resisting power of the pulmonary tissue as to permit this micrococcus to produce its characteristic effects.

"Again, we may suppose that a person, whose vital resisting power is reduced by any of the causes mentioned, may be attacked by pneumonia from external infection with material containing a pathogenic variety of this micrococcus having a potency, permanent or acquired, greater than that possessed by the same organism in normal buccal secretions."

This is the theory by which I have attempted to explain the etiological rôle of this micrococcus in croupous pneumonia. Let us now consider the principal facts which have led to a belief in its causal relation to this disease.

Friedländer,[2] in 1882, observed, in eight fatal cases of pneumonia in which he made autopsies, micro-organisms having an oval form in the exudate into the pulmonary alveoli; they were in pairs or in short chains. Without affirming that this micro-organism is the cause of pneumonia, Friedländer seems to have considered it extremely probable that it bore an etiological relation to the disease.

During the same year Leyden and Gunther announced at a meeting of the Medical Society of Berlin (November 20, 1882) that they had found the same micrococcus in the fibrinous exudate of pneumonia, obtained through the thoracic walls by means of a Pravaz syringe. At the same time Gunther stated that the elliptical cocci, in specimens stained with gentian violet, were surrounded with a colorless capsule.

The following year Matruy[3] published his observations. In sixteen cases he had found an elongated coccus in the fibrinous exudate of pneumonia, and always having a very transparent capsule. He had also encountered the same micro-organisms in the sputa of patients with other diseases, but not so abundantly as in pneumonia.

On November 19, 1883, Friedländer[4] communicated to the Medical Society of Berlin the results of his culture and inoculation experiments. His "pneumococcus" was characterized by the presence of a capsule which, as he says, "always takes the form of the micro-organism; if this is round the capsule is round; if it is elliptical the capsule is an ellipse." This capsule, however, was only found in preparations made from the blood of an inoculated animal, or from the fibrinous exudate into the alveoli; in cultures it was no longer seen. The cultures in flesh-peptone gelatine presented a nail-shaped growth which was believed to be characteristic. Growth was rapid in a variety of culture-media at the ordinary room-temperature (65° to 75° F.), and in a gelatine culture-medium no liquefaction occurred.

The following results were obtained by Friedländer in his inoculation experiments: In one series of experiments the "pneumococci," mixed with distilled water, were injected through the thoracic walls into the lungs. Nine rabbits inoculated in this way gave an entirely negative result. Six out of eleven guinea-pigs are said to have succumbed and to have presented the lesions of pneumonia. All of the mice injected died within twenty four hours, and at the autopsy the lungs were found to be congested and to present foci of red hepatization. In a second series of experiments upon mice they were made to inhale a spray containing the pneumococci in suspension. Several of these animals died, and are said to have presented a typical pneumonia. The "pneumococcus," surrounded by its characteristic capsule, was found in the lungs, the spleen, the blood, and the liquid contained in the pleural cavity.

Upon this evidence Friedländer's "pneumococcus," which is now usually described as a bacillus, was very generally accepted as the specific cause of fibrinous pneumonia, and cultures were distributed throughout the laboratories of Europe bearing the label, "Pneumococcus of Friedländer." For some time after the publication of Friedländer's paper all observations made with reference to the presence of oval cocci or of incapsulated cocci in the fibrinous exudate of pneumonia were supposed to confirm his discovery. But now we know that there is another oval coccus which is far more frequently present in the exudate of acute pneumonia, which also presents the appearance of being surrounded by a transparent capsule—less pronounced, however, than that of Friedländer's bacillus—but which is entirely distinct from that of Friedländer, and is probably the true pneumococcus. I shall give the distinctive characters of this micro-organism later.

At the same time that Friedländer was pursuing his researches in Berlin, Talamon, a French physician, was engaged in similar researches in the laboratory of the Hôtel-Dieu. His results were communicated to the Anatomical Society of Paris on November 30, 1883, a few days after Friedländer's communication to the Medical Society of Berlin (Germain Sée).

"Talamon did not describe his microbe as having a capsule; according to him the pneumonia-coccus is characterized by its form. When seen in the fibrinous exudate the microbe has an elliptical form, like a grain of wheat. Cultivated in a liquid medium—an alkaline solution of extract of beef—it is elongated and attenuated, and presents the appearance of a grain of barley. On account of this appearance Talamon has proposed to call it the *lanceolate coccus*. This organism is encountered in the pneumonic exudate obtained after death, or drawn during life by means of a Pravaz syringe from the hepatized portions of the lung. Once only, out of twenty-five cases, it was found in the blood of a patient at the moment of death."

Talamon's inoculation experiments in dogs and guinea-pigs gave a negative result, but out of twenty rabbits injected through the walls of the thorax into the lungs eight showed the characteristic lesions of fibrinous pneumonia. Professor Sée says, with reference to the evidence in the case of these rabbits as compared with that obtained by Friedländer in his mice: "The rather brief description of the lesions obtained by Friedländer in the mice inoculated by him leaves some doubt in the mind;

[1] I should have said frequent instead of "constant presence."
[2] Die Schizomyceten bei der acuten fibrinösen Pneumonie, Virchow's Arch., 1882, Bd. lxxxvii.
[3] Ueber Pneumonie-Kokken, Wiener med. Presse, June, 1883.
[4] Die Mikrokken der Pneumonie, Fortschritt der Medicin, Bd. i., 1883.

for the presence of foci (noyaux) of induration in congested lungs is not sufficient to characterize fibrinous pneumonia. But the lungs of the rabbits presented by Talamon to the Anatomical Society in support of his communication leave no room for discussion. As he observed, it was not at all a question of foci of congestion, or of broncho-pneumonia, such as one observes habitually in rabbits which die of septicæmia, but a veritable lobar fibrinous pneumonia with pleurisy and pericarditis of the same nature. The naked-eye examination, as well as the microscope, showed no difference in the lesions produced in the rabbit and the pneumonia of man."[1]

On another page Professor Sée says: "Afanassiew repeated in the laboratory of Professor Cornil the experiments of Friedländer and of Talamon; by the culture in peptonized gelatine of the pneumonic exudate taken from the cadaver, he obtained two species of organisms, round micrococci of large and small dimensions, and oval cocci which corresponded to the microbes described by the two authors" (Friedländer and Talamon) "whose researches we have just reviewed." This quotation indicates that Professor Sée did not question the identity of the oval or "lanceolate" coccus found by Talamon in pneumonic exudate, and which in his experiments produced typical pneumonia in rabbits, and the so called "pneumococcus" of Friedländer, which, according to his account, gave a negative result when injected into rabbits, but caused pneumonia in mice when injected directly into the lungs. Professor Sée was not alone in making this inference, which has turned out to be a mistaken one. The identity of the oval cocci, which had now been seen in the pulmonary exudate by numerous observers, with the micro-organism which Friedländer had isolated and cultivated from material obtained post mortem from hepatized lungs, was generally admitted; and all of the observations relating to the presence of oval cocci, having a more or less distinct capsule, in the exudate of fibrinous pneumonia, were supposed to give support to the alleged discovery of Friedländer. Now we know that the oval coccus most frequently found in such material is not that of Friedländer, but that it is identical with a coccus first observed by the writer in September, 1880, in the blood of rabbits injected with his own saliva and subsequently (1885) named by me *micrococcus Pasteuri*.

This was, without doubt, the coccus which produced pneumonia in Talamon's experiments upon rabbits; and we must give him the credit of having first experimentally demonstrated the fact that fibrinous pneumonia may be induced by the introduction of this micro-organism into the parenchyma of the lung in these animals.

Salvioli, whose experiments were also made in 1884, had a uniformly fatal result from the injection of pneumonic sputum into rabbits (4). He also observed the oval coccus in the material injected, and in the blood of the animals which succumbed to his injections, but did not recognize the identity of this coccus with that which my own experiments and those of Pasteur, Vulpian, and others had shown to be present in normal human saliva, and to induce a fatal form of septicæmia in rabbits. On the other hand, he also appears to have taken it for granted that the oval micrococcus encountered by him, and which, under certain circumstances, was surrounded by a transparent capsule, was the "pneumococcus" of Friedländer. Klein[2] appears to have made the same mistaken inference. This is shown by the following quotation from his paper published in 1885:

"In seeking to ascertain what might be the relation between the so-called pneumococci and croupous pneumonia, I have made extensive examination of the lungs and blood of persons dead of the disease, and also of the sputum of living patients at various stages of their illness. . . . In some of the air-vesicles, though few and far between, there were present undoubtedly the capsulated cocci spoken of by Friedländer and others as pneumococci. . . . As regards the living patients, if we examine typical sputum of croupous pneumonia, we find, besides numerous red blood-disks and white blood-corpuscles, also a few epithelial cells, and in the general gelatinous matrix numbers of micro-organisms, chiefly belonging to the species micrococci. . . .

"These are, as far as size and arrangement go, of two principal types: (*a*) Oval micrococci about 0.001 mm. in length, occurring isolated, but more commonly as dumb-bells and slightly curved chains of four, six, and even eight elements. . . . But in all these micrococci the elements are distinctly surrounded by a hyaline zone which, in stained preparations, can be made out as an unstained halo; though in some stained specimens it assumes a tint that is fainter than that of the micrococcus itself; this corresponds to the capsule of Friedländer, and for this reason he called them capsule micrococci."

In a foot note to the paper from which I have quoted, Klein says:

"While this paper is passing through the press I receive from Dr. Sternberg, of Baltimore, a paper in which he conclusively proves that the micrococci of human saliva, which produce in some instances septicæmia on inoculation into rabbits, are identical with the pneumococci of Friedländer, Salvioli, and others."

My own experiments with pneumonic sputum were made in January, 1885, and led me to the identification of the oval coccus found in this material with the coccus found in my own saliva (by inoculations in rabbits), in September, 1880, and subsequently studied by me in an extended series of experiments made during the following years, 1880–84.[1]

But, at the same time, I fell into the error of inference, previously made by Professor Sée, by Salvioli, and others, and assumed that the "pneumococcus" which Friedländer had obtained from the same source was the same, although I found it difficult to reconcile the experimental data, inasmuch as he had obtained uniformly negative results in his inoculations into rabbits. To explain this discrepancy I suggested that Friedländer's pneumococcus was probably a variety having a different degree of pathogenic power.

This supposition seemed to find support in the fact, which I had previously observed, that my micrococcus Pasteuri became attenuated, as to its pathogenic power, when the cultures were kept for some time; and that there seemed, from the experimental evidence before me, to be different pathogenic varieties in the buccal secretions of different individuals. At this time I had not seen a culture of Friedländer's bacillus. Later in the autumn of 1885, when I made its acquaintance in Dr. Koch's laboratory, I recognized my mistake and hastened to correct the error.[2]

For a detailed account of my experiments with pneumonic exudate, I must refer to my paper published in the "Transactions of the Pathological Society of Philadelphia" (vol. xii.), and in the *American Journal of the Medical Sciences* (July, 1885).

With reference to my conclusion that the oval coccus of Talamon and of Salvioli was identical with my micrococcus Pasteuri, I may say that this conclusion has been

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[1] Des Maladies spécifiques du Poumon, par le Professeur G. Sée. Paris, 1885.

[2] The Etiology of Acute Croupous Pneumonia (Human) and of Pleuro-pneumonia (Cattle). Fourteenth An. Rep. of the Local Govt. Board, London, 1885.

[1] A Fatal Form of Septicæmia in the Rabbit produced by the Subcutaneous Injection of Human Saliva: Johns Hopkins Univ., Stud. Biol. Lab., Balt., 1882, ii., No. 2, 183–200, 1 pl.; also National Board of Health Bulletins, vol. ii., 981.

Experiments with Disinfectants: Johns Hopkins Univ., Stud. Biol. Lab., Balt., 1882, ii., No. 2, 201–212; also National Board of Health Bulletins, Washington, 1881, vol. iii., No. 4.

Induced Septicæmia in the Rabbit: American Journal of the Medical Sciences, Philadelphia, 1882, lxxxiv., 69–76.

Virulence of Normal Human Saliva: Medical Times, Philadelphia, November 4, 1882.

Germicide Value of Therapeutic Agents: American Journal of the Medical Sciences, April, 1883, pp. 321–343.

[2] See my paper published in the American Journal of the Medical Sciences for July, 1886.

sustained by the subsequent investigations of Fränkel, Weichselbaum, Bordoni-Uffreduzzi, Netter, Gamaléia, and others.

Fränkel's first paper relating to the presence of this micro-organism in pneumonic exudate was published in 1885.[1]

Having ascertained that his own saliva contained this oval micrococcus, he was induced to make an extended and interesting series of experiments which led him to the conclusion that this micro-organism is far more constantly present in the exudate of fibrinous pneumonia than is the so-called "pneumococcus" of Friedländer. He says:

"Finally, as regards the relative frequency of the two hitherto investigated micro-organisms in cases of pneumonia, no positive statement can yet be made. Nevertheless, I am inclined to regard the lancet-shaped pneumococcus, which is identical with the microbe of sputum septicæmia, as the more frequent, and the usual infectious agent of pneumonia, on the ground that this organism is so much more frequently found in the sputum of pneumonic patients than in that of healthy individuals. This conclusion is further supported by the fact that it has not hitherto been possible to isolate, directly from the rusty sputum Friedländer's bacillus."[2]

The extended researches of Weichselbaum,[3] published in 1886, give strong support to the view that this coccus is the usual infectious agent in croupous pneumonia. He examined, in all, the exudate in 129 cases of pneumonia.

In 94 of these cases the micrococcus in question, called by Weichselbaum "diplococcus pneumoniæ," was obtained (54 times in cultures); in 21 cases he obtained a streptococcus, and in 9 only was the bacillus of Friedländer encountered.

Wolf,[4] whose studies were made in Weichselbaum's laboratory, reported the result of his researches in 1887. He found the "diplococcus pneumoniæ" in 66 out of 70 cases of croupous pneumonia examined, and the "pneumococcus of Friedländer" in 3 cases.

Netter,[5] whose paper was published in November, 1887, found M. Pasteuri in seventy-five per cent. of his cases of pneumonia, and in the sputum of convalescents from this disease its presence was verified in sixty per cent. of the cases by inoculation experiments in rabbits. He makes the interesting observation that the sputum of recent convalescents is less virulent for rabbits than that collected at a later period.

Gamaléia, who has recently published in the "Annales" of the Pasteur Institute an important paper upon the etiology of fibrinous pneumonia, verified the presence of M. Pasteuri in twelve fatal cases, in which he collected material post mortem. He states that in a series of 40 consecutive cases Dr. Goldenberg, whose experiments were made in his laboratory, found this micrococcus in every case by inoculation experiments in rabbits or in mice. According to Gamaléia, inoculations in mice are more reliable than those made in rabbits, as the mouse is the more susceptible animal. He says: "The author, Weichselbaum, who has made the most extended research upon the etiology of pneumonia, used in his researches the method of cultivation upon gelatine. We must adopt the opinion of Baumgarten, who does not accord any decided value to the negative results of Weichselbaum with reference to the constant presence of streptococcus Pasteuri. Netter, who adopted the method of inoculating the pneumonic sputum into rabbits, and who only found the microbe of Pasteur in seventy-five per cent. of his cases, was wrong, in our opinion, in making use of an animal which is too resistant to determine the presence of small quantities of virus. This opinion is confirmed by the fact that Netter rendered some rabbits refractory by his inoculations with material in which he had not found the specific microbe."

"*En résumé*, taking our stand upon the positive results which we have always obtained, as well as upon the superiority of the method of research (inoculations in mice), which we have adopted, we believe ourselves authorized to conclude that fibrinous pneumonia is always dependent upon the microbe of Pasteur."[1]

Fränkel, Weichselbaum, and other recent authors, while maintaining that micrococcus Pasteuri is the most frequent etiological agent in the production of pneumonia, have been disposed to admit that in a certain proportion of the cases the bacillus of Friedländer, and possibly other micro-organisms, may bear the same relation to the pneumonic process. Gamaléia, on the other hand, believes that the bacillus of Friedländer is a simple saprophyte, the occasional presence of which in pneumonic exudate is without etiological import. He remarks as follows:

"We may be brief as regards the second objection made against the etiological unity of fibrinous pneumonia, viz., with reference to the etiological rights of the microbe of Friedländer. This microbe is found in normal saliva, it is a true saprophyte, and may at times invade the diseased or dead lung. Weichselbaum only found it in seven per cent. of his cases, and almost always associated with other microbes, for he only encountered it pure in three cases. As to the researches of the authors who preceded Fränkel, it is sure that the microbe which they often found in sections of diseased lungs, and which they called the microbe of Friedländer, was in fact the microbe of Pasteur, since it was colored by the method of Gram, which decolorizes the bacillus of Friedländer. Many of the positive results, then, which have been reported relative to the last-mentioned micro-organism, ought to be put to the account of the other."

This opinion the present writer has entertained since his researches made in 1885.

The experimental evidence offered by Gamaléia in favor of the etiological rôle of this micrococcus is most important.

It will be remembered that Talamon produced typical pneumonia in eight rabbits, in 1883, by inoculating them through the thoracic walls with pneumonic exudate. Gamaléia says:

"The number of my rabbits in which pneumonia was induced is about two hundred."

The writer found in his experiments, made in 1881, that in making a series of inoculations in rabbits the virus increased in virulence; and that, on the other hand, the micrococcus lost its virulence when the cultures were kept for some time. This fact has been verified by the subsequent researches of Fränkel and of Gamaléia. The last-named author has shown that to induce pneumonia in very susceptible animals, like the rabbit, an attenuated variety of the microbe should be injected, for the most virulent cultures quickly cause death by septicæmia. As he expresses it: "Animals which are too susceptible, like the rabbit and the mouse, do not have pneumonia, because they do not offer a local reaction; the virus is generalized in their bodies, and they die of an acute septicæmia."

On the other hand, Gamaléia has shown that "animals which are but little susceptible to the pneumonic virus offer a local resistance which gives rise to very pronounced reactionary phenomena (extended fibrino-granular œdema), and consequently they present, as a result of intrapulmonary infection, a typical fibrinous pneumonia. Such animals are the dog and the sheep."

In his experiments upon these animals Gamaléia obtained the following results:

The sheep was found to survive subcutaneous inoculations, unless very large doses (5 c.c.) of the most potent

[1] Bacteriologische Mittheilungen, Verhdlg. d. Vereins f. innere Med., July 13, 1885; Deutsche med. Wochenschrift, No. 31, p. 546, 1885.
[2] Zeitschrift für klin. Med., Band x., H. 5 and 6, 1886.
[3] Wiener med. Jahrbücher, 1886.
[4] Wiener med. Blätter, 1887, Nos. 10–14.
[5] Comptes rendus hebdom. des Séances de la Société de Biologie, November 4th, 1887, No. 34.

[1] Annales de l'Institut Pasteur, tome ii., No. 8, August 25, 1888, p. 447.

virus were administered. But intra-pulmonary inoculation was always followed by typical fibrinous pneumonia, which in the majority of cases proved fatal.

The microbe was rarely found in the blood, and successive inoculations from one sheep to another were not successful. Death occurred, after an intra-pulmonary inoculation, on the third, fourth, or fifth day. The pneumonia produced was lobar, and was attended with an extensive fibrinous exudation in which the coccus was found in great abundance. In all, fifty sheep were experimented upon.

The writer found in his experiments, made in 1881, that the dog resists inoculations with this coccus. Gamaléia also obtained negative results when moderate doses were injected beneath the skin, but states that "intra-thoracic infection always causes a frank, fibrinous pneumonia which is rarely fatal; recovery usually occurs in from ten to fifteen days, after the animal has passed through all the stages of red and gray hepatization which characterizes this affection in man." Twelve dogs were experimented upon.

This micrococcus, then, which in very susceptible animals (mouse, rabbit) invades the blood and quickly causes death by septicæmia, when injected through the thoracic walls in less susceptible animals (dog, sheep), or in an attenuated form in the rabbit, gives rise to the local lesions which characterize fibrinous pneumonia.

Man comes in the category of slightly susceptible animals, as is shown by the comparatively small mortality from pneumonia, and the fact that the micrococcus found in the exudate into the pulmonary alveoli does not invade the blood, unless in rare instances. We may therefore agree with Gamaléia in the following statement:

"It is clear that the results obtained in the dog and the sheep, animals which have but a slight susceptibility, are most applicable to human pathology."

In my paper read before the Pathological Society of Philadelphia in April, 1885, from which I have already quoted, I say: "It seems extremely probable that this micrococcus is concerned in the etiology of croupous pneumonia. . . . But this cannot be considered as definitely established by the experiments which have thus far been made upon the lower animals."

The experiments of Gamaléia go far toward settling this question in a definite manner, and, considered in connection with those of Talamon and Salvioli, and the extended researches of Fränkel, Weichselbaum, and Netter, leave but little doubt that this is the true infectious agent in acute lobar pneumonia.

(To be Continued.)

Periodical Neuralgia of the Cornea.—Dr. Granclément, of Lyons, has described an affection which, he says, is rather frequent, consisting in a sort of periodical and ill-defined neuralgia of the cornea, following a very slight traumatism of this membrane. The traumatism consists, more frequently, in a simple grazing by the leaf of a shrub, the finger of a little child, or any other soft body which cannot do much hurt. To this condition he has applied the term traumatic keratalgia. Soon after the accident, although the cornea presents no excoriation, the patient suffers a good deal and periodically from neuralgic phenomena which are reproduced irregularly for some years, like rheumatoid pains. One can only attribute these accidents to a slight neuritis of one or more of the ciliary nervous filaments of the cornea which are found in the sphere of action of this slight traumatism. If the stronger traumatisms of the cornea, such as those resulting from the incrustation of a splinter of iron, or any other metal, do not leave behind them similar neuralgias, it is because the nervous filaments touched had been destroyed, and not simply bruised. The only remedy which appears to relieve these patients is the employment of cocaine.—*Paris Correspondence of the Journal of the American Medical Association.*

PYELITIS AND AN ACUTE SUPPURATIVE NEPHRITIS CAUSED BY COMPRESSION OF THE URETER FROM A CICATRICIAL MASS, THE RESULT OF A PELVIC ABSCESS.

By LEROY BROUN, M.D.,

NASHVILLE, TENN.

During my service as house-surgeon of the New York Cancer Hospital there came under my care a case as interesting as it was puzzling. Through the courtesy of Dr. James B. Hunter the particulars are given below:

The woman, a German by birth, had been in this country six years; she was single, and aged twenty-nine. She was of good habits, robust appearance, and, as was thought by all, to be of a hysterical nature. Five years ago she entered one of the general hospitals of the city for some minor complaint, attended by hysterical retention of urine.

While there she was catheterized frequently, and left the institution with a case of vesical irritation.

Finding, in time, no relief from her constant and painful micturition, she applied for admission at Bellevue Hospital, when she remained only a short while, leaving at her own request. We next hear from her in the spring of 1885, when, for the first time, she came under the notice of Dr. Hunter—at which time she complained of severe dysmenorrhœa, constant severe pain in the left groin, sacral pains, and frequent and painful micturition.

She was sent to the Woman's Hospital, and while there the examination of urine was negative. Not improving under treatment, an oöphorectomy was proposed, which she gladly accepted.

The relief brought about by the operation was only temporary, for in the fall of the same year she applied at the Polyclinic for relief from the same symptoms, excepting the dysmenorrhœa, which was gradually ceasing; she also complained of frequent attacks of severe congestive headache. Local examination showed sensitiveness in anterior cul-de-sac, and at the site of both pedicles—especially the right; all else was negative. During the following year a sanious discharge continued, at irregular intervals, attended by pain; though the headaches increased, and with them the local pain and sensitiveness.

She continued in this wretched condition until the summer of 1886, when she had an attack of pelvic inflammation caused by the passing of a sound. This resulted in the formation of a pelvic abscess to the right of the uterus, which, discharging into the vagina, rapidly healed and left a permanent induration the size of an English walnut.

During the time from her first application to the Polyclinic, up to 1888, she was under constant treatment, including almost every known method of relief, yet none afforded the desired improvement.

From her intractable headaches, pelvic and groin pains, she was, in part, the subject of a paper, "Persistent Pain after Laparotomy," by Dr. Hunter; also, "Cerebral Hyperæmia after Removal of Uterine Appendages," and "Is Disease of the Ovaries and Tubes as Frequent as Represented?" both by Dr. Coe.

Returning, as she often did, to Dr. Coe, he always found her condition locally the same. She frequently insisted on another abdominal section, but was dissuaded from it both by Dr. Hunter and himself. Finally, declaring that she would rather die than live as she was, and malignant disease of the intestines being suspected, she was sent to the Cancer Hospital to see what could be done.

Upon entering the hospital her physical condition was excellent, yet with a facial expression of nervous anxiety. The local conditions were as above described, with considerable tenderness over the mass on the right side. Frequent examination of the urine was always negative. The abdomen being opened by Dr. Hunter, it was found impossible to remove the mass, even by strong force, and, a few recent adhesions being broken up, the wound was

closed. She made a rapid recovery, and during the two weeks following showed no rise of temperature whatever.

Upon the fourteenth day she complained of slight pain over the right groin, which toward the afternoon increased greatly. At 8 P.M. the patient developed a severe chill, with a temperature of 103° F., and complained of severe pain over right side. Local examination showed exaggerated tenderness over the old localities, which was much so over the indurated mass. For the following twenty-four hours the temperature ranged between 103° and 104° F., with successive chills; pulse full. This high range with repeated chills continuing for the following day, the abdomen was reopened and careful search made for the seat of trouble, but to no effect. After repeated washing out with warm water a drainage tube was introduced, and wound closed. The tube was washed out every six hours. Upon the third washing about one ounce of pus was obtained; the washing was then continued every three hours.

For the succeeding six days the condition of the patient varied much. The temperature was that of one thoroughly septic, yet her pulse held out well. The washings were continued as above, the adhesions around the tube being broken up on two occasions under chloroform. For the last two days she rapidly grew worse, and died eight days after the occurrence of the first rise of temperature.

During this period the urine was daily examined and measured. The amount was not sufficient to excite any interest, and it contained no albumen or pus until four days before the termination. Toward the close the urine was loaded with pus and albumen, but no casts.

The post-mortem, conducted by Dr. Coe, showed the following: The spleen was enlarged and soft, and the liver congested. The intestines were matted together by organized lymph, general intense peritonitis existing everywhere. The cavity contained about thirty ounces of purulent fluid. The left kidney was markedly congested and ureter normal. The right was enlarged at the expense of the pelvis, which was much dilated and contained a few drops of pus; the pelvic mucosa was considerably thickened and intensely congested. On section of the organ the entire glandular portion was softened, and presented a yellowish appearance; upon close inspection streaks and foci of pus were visible. The right ureter was dilated to the size of the little finger and contained pus, while its walls were markedly thickened, as from an old inflammation.

The uterus was drawn backward and anchored to the right of the sacrum by a firm, fibrous mass. This organ was so firmly attached that it was impossible, through the exertion of considerable force, to detach it. The mass, the result of the old inflammation and abscess, extended upward along the right psoas muscle and compressed, but did not entirely occlude, the right ureter, which passed through it. On section this had a fibrous nature, and had, in its centre, a softened area with a few drops of pus. On the left side there was no trouble. The bladder was slightly congested at its base; the entrance of the right urethra was normal.

To sum up the above history and autopsy in a few words, we find that: 1. She had an attack of cystitis, probably of mild form, which subsided to one of slight vesical congestion. 2. She had severe headaches and other symptoms, all of which were referable to the pelvis, even before the pelvic inflammation and formation of adhesions, and all of which resisted the most approved treatment. 3. She had a dilated ureter and pelvis of long standing, as evinced in their thickened walls. This culminated in pyelitis with an acute interstitial suppurative nephritis; none of which was recognized during life.

The case presents points of unusual interest: First, the compression of the ureter by the fibrous mass, and, lastly, the failure to diagnose the glandular lesion. The last is of special interest to me, since it presents the question: Can the symptoms of slight inflammations of the pelvis and ureter be always recognized in those under treatment for diseases of the reproductive organs?

Given a pyelitis with suppurative nephritis, the constitutional symptoms, with the examination of the urine, are two great points, suggesting, as they do, closer examination of the lumbar region and previous history. But given a subacute inflammation of the pelvis and ureter in a woman under treatment—say, for a displaced uterus or ovarian trouble—do we not often overlook it?

The kidneys, pelvis, and ureter are under the control of the sympathetic nervous system. Branches from this plexus are directly connected with the ovarian sympathetic plexus. The uterus and its appendages are supplied by the sympathetic system, together with the third and fourth sacral nerves.

The sympathetic nerves, while capable of sensibility, are much less so than those of spinal origin.

These two sets of supply to the uterus and its annexa are intimately connected. Then is it not possible, and is it not the case, that the pain felt by a patient in a disturbance of the normal condition of the kidney, pelvic mucosa, and ureter, is referred chiefly by her to the pelvis, and to the course of the trigeminal nerve, which is intimately connected with the entire sympathetic system through its ganglia?

If this is true, I well see how she might overlook entirely her supposed minor trouble, and mislead the questioner, who, not finding grounds for her complaint, places her in the category of a hysterical woman.

There are two classes of cases somewhat parallel to this reflex neurosis—the one in man—where we often have, as the only symptom during the passage of a small renal calculus, that of pain in the corresponding testicle with drawing up of the same. Again, in old lacerations of the cervix, when any symptoms arise from it they are chiefly reflex, and prominent among them is the severe trigeminal neuralgia.

These few thoughts have not been suggested in order to explain the symptoms of the above case, the formation of the abscess and cicatricial mass, for certainly these strong adhesions attached to the fundus of the uterus were sufficient to occasion all of her sufferings, but seeking for their explanation before this period is the object of these lines.

The immediate cause of death in this case was evidently septic peritonitis, which had its origin in a sloughing area in the cul-de-sac, set up by the constant movement and pressure of the tube for such a time.

High and Cedar Streets, February 24th.

One Thousand Operations for Hæmorrhoids by the Method of Ligation.—Dr. J. M. Matthews, of Louisville, Ky., states (*The Journal of the American Medical Association*) that he has operated about one thousand times for hæmorrhoids by the ligature. He has never had to operate the second time upon the same patient for the affection. He has never had an unnatural contraction around the anus as the result of the operation, nor had ulceration or stricture to result. He has had one case of tetanus, which he believes to have been superinduced by a debauch, the patient having been drunk for several days before the operation. The tumors protruded, strangulated, and mortified, hence the operation. The patient recovered from the tetanus under bromide treatment. He has had one case of secondary hemorrhage occurring on the third day. The rectum was plugged and the bleeding stopped. Also one dangerous case of hemorrhage, which occurred one hour after operation was done, in consequence of the slipping of the ligature, the pile having been cut off. The patient was pulseless and cold when seen, but the artery was quickly secured and tied, and he made a good recovery. Dr. Matthews has never had a single death result from the operation, and but few untoward symptoms.

THE CAUSES OF RUPTURE OF CEREBRAL AND AORTIC ANEURISMS DURING SLEEP.

[By R. VAN SANTVOORD, M.D.,
NEW YORK.

In the *American Journal of the Medical Sciences* for March, 1889, the following passage occurs in a suggestive article by Dr. H. M. Biggs on "Aortic Aneurisms." "Contrary to what would *à priori* be supposed, death occurred in but few instances during severe muscular exercise. As a rule, there was no apparent immediate cause for the rupture, as it occurred during sleep, or at times when there was no unusual muscular exertion. This was also true of the two cases of rupture of the aorta; one occurred when the patient was lying in bed, and the second while the patient was returning home from work. This is rather a remarkable fact, and does not tend to confirm the usual opinion, that severe strains have so large an influence as has been ascribed to them in the production of the dilatation and rupture of the aorta."

A pathological fact similar to this, viz., the frequent rupture of miliary cerebral aneurisms during sleep, has for a long time been a puzzle to the writer. Reflection on the above-cited paragraph has suggested the following explanation of the phenomena:

During an active physical effort (*i.e.*, straining), the fact of a very great increase of arterial tension can readily be demonstrated by the sphygmograph. The factors which give rise to this increase are: 1. The increased peripheral resistance caused by the obstructed return of the blood to the thoracic and abdominal vessels, and the actual compression of peripheral vessels, especially the capillaries and veins, by the contracting muscles. 2. The increased friction arising from the increased rapidity of the blood-current, resulting from the increased rapidity of cardiac action. As soon as the effort ceases the blood pours with facility into the relaxed abdominal and thoracic vessels, the peripheral arteries relax, and the arterial tension falls rapidly. Such, at least, seems to be a fair interpretation of the sphygmograms that the writer has taken on himself during and after effort. During effort the glottis is closed, the thoracic and abdominal muscles contract, and the intra-thoracic and intra-abdominal pressure is greatly increased. This increased extra-vascular pressure must be more or less efficacious in offsetting the increased intra-vascular pressure during effort, as far as the abdominal and thoracic vessels are concerned. This seems to the writer a plausible reason why thoracic aneurisms do not rupture as frequently as might *à priori* be expected during severe muscular exercise. But why should they rupture during sleep or physical quiet? To this question the following answer is suggested. It is quite conceivable that the strain on the aorta might be greater when the arterial tension is increased by increased cardiac action without the safeguard of the increase of extra-vascular pressure, such as occurs during deliberate muscular effort. Such increase may be caused by shock or emotion. How great an effect this latter may have is strongly illustrated by a case of rupture of the aortic valves, recorded by Da Costa in his Toner Lectures. A young and previously remarkably healthy girl witnessed the shooting of a soldier who entered her residence, during the late war. She was greatly terrified, became from that moment very short of breath, and died shortly afterward with all the signs and symptoms of aortic regurgitation.

During sleep, when the inhibiting influences of the mind are inactive, a bad dream or a sudden noise will often give rise to excited cardiac action. The same effect will be produced by a sudden physical shock when awake, such as stumbling on an uneven pavement. Such occurrences, by reason of their commonness, are not apt to be remembered. Yet it is quite conceivable that an instantaneous increase of pressure caused by a few rapid and powerful cardiac contractions, due to the slamming of a shutter during sleep, might rupture an aneurism which, when guarded by the increased extra-vascular pressure incident to muscular exertion, could have borne exactly the same increase of intra-vascular pressure with impunity.

It is obvious that this explanation applies also to cases of cardiac rupture occurring during sleep or without physical exertion.

With regard to the common occurrence of cerebral hemorrhage during sleep, the following explanation is offered.

During effort the return of the blood from the head is impeded. The blood, dammed back in the cerebral veins and capillaries, distends them. This distention causes in the cerebral cavity an increased extra-arterial pressure which must have an effect in offsetting the increased intra-arterial pressure. Here again, as in the case of aortic aneurism, we might *à priori* expect the most danger from causes which give rise to increased intra-arterial pressure without any increase of extra-arterial support. Here again, slight shock from some internal or external source, not being opposed in its action on the heart by the inhibition of the fully awakened intellect, may cause damage which, at first sight, might seem disproportionately great. If these explanations are correct it follows, that shock and emotional disturbances are more potent factors in causing dangerous increase of intra-vascular pressure in the thoracic and cerebral vessels than physical strain. It would be of great interest to study individual cases as they present themselves to test the validity of these conclusions.

106 West 122d Street.

A CASE OF MALIGNANT ENDOCARDITIS; INFECTION APPARENTLY FROM URETHRITIS.[1]

By JOHN S. ELY, M.D.,
NEW YORK.

Clinical History.—J. D——, male, aged twenty-eight, United States, waiter, single, walked into Roosevelt Hospital on March 17, 1888, in a very stupid condition. All that could be learned was that he had been sick for about three days. He was poorly nourished and anæmic; no sign of paralysis; pupils normal. Temperature, 105.8° F.; pulse, 130. During the night he was very restless and had to be tied down; vomited several times; passed urine and fæces involuntarily. The next morning his fever had abated somewhat, but his mental condition remained the same. On the 19th a partial left hemiplegia was noticed, and he frequently expectorated a brownish fluid. He failed rapidly, notwithstanding liberal stimulation, and died at 8.15 P.M.

Autopsy, by Dr. Delafield, nineteen hours after death. "Body fairly nourished. Brain, some increase of serum and some venous congestion. Old opacities of pia, more marked on left side. Brain normal. Lungs congested. Heart, old pericardial adhesions. Mitral valves have recent vegetations along margins. Aortic valves normal. Liver congested. Spleen, large and soft; contains some small infarctions. Kidneys, rather large, studded by a number of foci, apparently embolic. Stomach normal. Small intestine normal."

At the close of the autopsy, as no source of infection had been discovered, it occurred to Dr. Roosevelt, who was present, to examine the man's urethra, for any sign of inflammation. To his satisfaction, on squeezing the penis sufficient pus was obtained to make several cover-glass preparations and to inoculate some gelatine tubes. These, together with portions of the various organs, were sent to the Pathological Laboratory of the College of Physicians and Surgeons for examination.

Through lack of time the cultures were neglected and died before any observations were recorded, so that nothing determinate came of them. The cover-glasses and portions of the organs were, however, saved, and it is the result of their examination which I desire to report to-night.

[1] Read before the Anniversary Meeting of the New York Pathological Society, January 9, 1889.

Microscopical examination of the mitral valve shows, besides the old connective-tissue proliferation of chronic endocarditis, recent infiltration of the substance of the valve with small round-cells and fibrin, together with erosions on the surface of the valve, covered with fibrin and teeming with micro-organisms. These last are of two forms, micrococci and bacilli. The micrococci are by far the more numerous and are arranged in clusters and in chains; both varieties retain the stain when Gram's method is employed. The bacilli are slender rods, about four times as long as broad. They are in very small numbers and stain by Gram.

In the liver there are occasional foci of broken-down tissue, each of which is surrounded by a zone of tissue densely infiltrated with small round-cells. In these small abscesses micrococci are readily to be seen when stained by Gram's method. Besides lying loose in groups and chains in the abscess-cavities, occasional masses of micrococci are occluding small blood-vessels surrounded by areas of more or less necrosed tissue. The liver shows also some congestion and fatty infiltration.

The splenic tissue is very soft and engorged with blood. Emboli of micrococci occlude many of the small arteries.

It is in the kidneys, however, that the most pronounced changes have occurred. The blood-vessels in many parts are much distended by blood. Large areas of degeneration of the epithelium of the tubules are present, and scattered here and there over the surface of the kidney are small abscesses, in the centre of which there are groups of micrococci. Emboli of micrococci are to be seen in the interlobular arteries, in the vasa recta, and in the vessels of the glomeruli. The micrococci are morphologically identical with those in the liver, spleen, and vegetations on the mitral valve. They stain by Gram's method.

The lesion in the urethra is of a catarrhal nature. The epithelium is swollen and detached from the basement membrane. In places, the desquamated epithelium is heaped up in considerable masses, and in these masses are small clusters of micrococci in clusters and chains, which stain by Gram's method and are similar, morphologically, to those found in the internal organs. None of them are present in the deeper parts of the penis, nor is any lesion in the corpus spongiosum apparent. No undoubted gonococci have been seen.

The pus obtained from the urethra at the autopsy is teeming with micro-organisms. A few of these resemble gonococci very closely, being small diplococci, flattened on the adjacent sides, occurring both in the desquamated epithelium and free, and staining with fuchsin. These are not visible in the specimens stained by Gram's method, and in this point correspond with Neisser's gonococcus. Large numbers of other micrococci are to be seen everywhere through the pus. They are in clusters and short chains, and stain by Gram's method. Measurement shows these micrococci to correspond closely in size to those in the internal organs. They are not all of exactly the same size, but average about .9 micromillimetre in diameter.

As the result of the study of the specimens, the details of which have just been given, it is thought that the malignant endocarditis, with its attendant lesions in the other organs, may be attributed to the presence of staphylococcus pyogenes aureus and streptococcus pyogenes, and that it is not unlikely that these micro-organisms found entrance into the general system through the urethra.

The numerous and frequent complications and sequelæ of gonorrhœa have made it evident that the urethra may be an important site of inoculation of the general system. As far back as Lasègue's time the joint affection in gonorrhœal rheumatism was known to be a suppurative arthritis, and in 1880 Haslund [1] further directed attention to the marked differences between articular rheumatism and the gonorrhœal complication. The discovery of the gonococcus, and the fact of its presence in the pus of gonorrhœal joints, determined by Petrone,[2] Kammerer,[3] Smirnoff,[4] and Hartley,[5] remove all doubt as to the nature of the trouble and the source of the infection. This is a striking example of infection of the system from the urethra, but others are equally so: for instance, complicating epididymitis and orchitis, and suppurating buboes; abscesses in the prostate and Cowper's glands.

That a non gonorrhœal urethritis occasionally occurs is coming to be quite generally recognized. These cases are usually of short duration, and gonococci are absent in the discharge. Bockhart [6] has described a micrococcus, differing in many respects from the gonococcus, as occurring in this form of urethritis.

Again, the possibility of *mixed* infection has been attracting attention, and there are now a number of cases on record of this nature. Bumm [7] found the pyogenic bacteria to be the most frequent cause of these mixed infections. That such cases should occur is not strange, considering that Lustgarten and Mannaberg [8] have described eleven varieties of micro-organisms as occurring in the normal urethra, and among them staphylococcus pyogenes aureus. Bockhart [9] details two cases of such mixed infection; in one there was a suppurating bubo, in the other a peri-urethral abscess. In both cases gonococci were absent from the pus of the abscess-cavities, and staphylococcus pyogenes aureus was present in large numbers.

The literature of malignant endocarditis and pyæmia is not devoid of cases in which the source of infection seemed to lie in the urethra. In a somewhat hasty review of the literature since 1880, I have come upon the following: In that year Schedler [10] reported a case of malignant endocarditis following gonorrhœa, in which gonorrhœal joints complicated and, seven months later, were thought to be the source of infection to the heart. The patient died about a month after the involvement of the heart. In 1881 Weigert [11] called attention to the frequency of lesion of the male genitals in pyæmia; of 17 cases of pyæmia examined, 8 had lesion of the genitals (abscess of the prostate, vesiculæ seminales, etc.). He does not, however, allude to the lesion in the genitals as the source of the systemic infection. The same year a case of pyæmia secondary to gonorrhœa was described by Holst.[12] In this case, also, gonorrhœal joint trouble was present. Two years later (1883) Petersen [13] published an interesting résumé of 975 cases of gonorrhœa treated at the Alexander Hospital in St. Petersburg. Of these 537 were complicated cases, in two of which the complication was peri-urethritis, with pyæmia as the cause of death in one of these. In 1884 Dérignac [14] cited a case of endocarditis secondary to gonorrhœal joint affection.

[1] Haslund, A.: Gonorrhoisk Rheumatisme og Pyarthrus gonorrhoicus. Ugeskr. f. Lägev., 4 R. I., No. 1, pp. 1-10; No. 2, pp. 17-26.

[2] Petrone, L. M.: Sulla natura parasitaria dell' artrite blenorragica. Rivista clinica di Bologna, 3 ser., iii., No. 2, pp. 94-113.

[3] Kammerer: Ueber gonorrhoische Gelenkentzündung-Centralbl. f. Chir., 1884, No. 4

[4] Smirnoff: Etiology of Gonorrhœal Arthritis. Lancet, August 28, 1886: Review.

[5] Hartley, F.: Gonorrhœal Rheumatism, Especially in the Female. N. Y. Med. Journal, vol. xlv., 1887, p. 376.

[6] Bockhart, M.: Ueber die pseudo-gonorrhoische Entzündung der Harnröhre und des Nebenhodens. Monatshefte f. prakt. Dermatol., v., 1886, No. 4.

[7] Bumm, E.: Ueber gonorrhoische Mischinfectionen beim Weibe. Deutsche med. Wochenschr., 1887, No. 49, p. 1057.

[8] Lustgarten and Mannaberg: Ueber die Mikroorganismen der normalen männlichen Urethra und des normalen Harnes, mit Bemerkungen ueber Mikroorganismen im Harne bei Morbus Brightii acutus. Vierteljahrschr. f. Dermatol. u. Syphilis, xiv., 1887, p. 905.

[9] Bockhart, M.: Ueber secundäre Infection (Mischinfection) bei Harnröhrentripper. Monatshefte für prakt. Dermatol., 1887, No. 19.

[10] Schedler, Paul: Zur Casuistik der Herzaffectionen nach Tripper. Inaugural Dissertation, Berlin, 1880.

[11] Weigert, C.: Zur Technik der Microscopischen Bacterien-Untersuchungen. Virchow's Archiv, lxxxiv., 1881, p. 275.

[12] Holst, J. C.: Tilfälde af Gonorrhœ med. Pyæmi. Norsk. Mag. f. Läg., 1881, 3 H., x., 389.

[13] Petersen, O.: Seltene Complicationen bei Urethritis. St. Petersburg med. Wochenschr., 1883, No. 45.

[14] Dérignac: Endocardite blenorrhagique. Gaz. Méd. de Paris, 1884, No. 7.

This case recovered. In Paget's [15] investigation (1886) of 500 cases of pyæmia, 97 were thought to depend upon lesion of the genito-urinary organs. As Paget does not cite the cases in detail it is impossible to learn how many of them were dependent upon gonorrhœa. Unquestionably two of them were thought to be, for on consulting an article by Savory in St. Bartholomew's Hospital Reports, vol. iii. (1867), to which Paget refers as the source of 133 of his cases, I find these two attributed to gonorrhœa alone. Besançon [16] in 1886 reported two cases of malignant endocarditis in which lesions in the genito-urinary organs, which originated from the urethra, were thought to be the source of general infection. In the first of these, old suppuration of the seminal duct and epididymitis were found at the autopsy; in the second, abscess at the neck of the bladder, behind old strictures. In both cases pyogenic bacteria were obtained from the various lesions. In 1887 Lancereaux [17] added two cases to the list. In both malignant endocarditis was secondary to disease of the genital organs; in the one case of the prostate, in the other of the testicle. In the same year Van der Velden [18] described two cases of acute endocarditis secondary to gonorrhœa. Although both lived, there was thought to be no doubt as to the relation of the two affections. Recently Roswell Park [19] has reported a case of pyæmia thought to have resulted from gonorrhœa. The etiology of the case is somewhat obscured because of an old abscess at the sterno clavicular articulation.

There are, then, on record at least nine cases of malignant disease, be they classified as cases of pyæmia or of malignant endocarditis, in which the urethra appears to have been the point of entrance of the micro-organisms. In none of these cases, so far as I am able to learn, were any cultures made, and, in so far, the proof of the etiological relation between the two affections is lacking. The morphological identity of the micro-organisms, in the cases examined, in the lesions of the genital organs and in those of the internal organs, certainly points to a connection between the two. It is somewhat difficult to conceive of a urethritis as resulting from a malignant endocarditis, and that the two lesions should be mere coincidences, without closer relation, in so many cases, though perfectly conceivable, seems to me improbable. In our case the fact that, though carefully looked for, no other point of infection was found, strengthens the theory that the urethritis was the primary lesion. It is a pity that no statement of the duration of the urethritis could be obtained *ante mortem*, as much light might have been thrown upon the case by it.

Our knowledge of the etiological relation between urethritis and malignant endocarditis and pyæmia may be summarized as follows:

1. Pyæmia has been shown by the investigations of Rosenbach [20] and Passet [21] to be due to the presence of the pyogenic bacteria—staphylococcus pyogenes aureus, albus, and citreus, and streptococcus pyogenes.

2. Micro-organisms belonging to this same class have been found in the valvular lesion of malignant endocarditis by Wyssokowitsch,[22] Weichselbaum,[23] Ziegler,[24] Prudden,[25] and others, and experimental endocarditis in animals has been produced by the above-mentioned writers and by Ribbert,[26] by the inoculation of the same micro-organisms.

3. The complications of gonorrhœa are very numerous, and for their explanation the possibility of introduction of micro-organisms into the general system must be presupposed.

4. In certain cases of mixed gonorrhœal infection of the urethra, pyogenic bacteria have been found along with the gonococci (Bumm,[7] Bockhart [8]).

5. Nine cases are on record in which malignant general infection occurred in patients suffering from gonorrhœa, and in some of these (Besançon,[16] Lancereaux [17]) micro-organisms morphologically identical with the pyogenic bacteria have been found in the urethral discharge as well as in the lesions in the internal organs. In these nine cases the urethra was the only discoverable point of infection.

The case which has been reported is thought to be another of the same nature. Whether the coincidence of the urethritis and the general disease be merely accidental, or whether the one bears an etiological relation to the other, is the question. There is certainly no inherent impossibility in the idea that infection should find entrance to the system through the urethra. Why should not ulcerated urethral mucous membrane offer as good opportunity for the entrance of micro-organisms as ulcerated mucous membrane in other parts of the body? It remains only for some intelligent investigator to prove it in a few cases by a careful study of the micro-organisms found in the various lesions in pure cultures.

ANTIPYRINE RASHES.—At a meeting of the Southeast Hants District Medical Society, Dr. C. C. Claremont read a paper on "Antipyrine Rashes," in which he described two cases which had occurred during the course of enteric fever. In the first, ten doses of fifteen grains had been given in the course of ten days, when the eruption appeared. It came out simultaneously on the abdomen, thorax, back, and limbs in the form of papules, darker, larger, and more solid than the spots of enteric fever. There was a considerable resemblance to measles. The eruption developed into enormous erythematous blotches, with much infiltration, their vivid red color being removed by pressure, leaving faint yellow pigmentary discoloration. The rash began to subside on the sixth day, and on the tenth day was only represented by faint coppery maculæ, resembling an old syphilitic eruption. Antipyrine was omitted on the appearance of the eruption. In the second case, the drug had been given in fifteen-grain doses, generally twice a day, and omitted altogether for four days. The enteric exanthem had been unusually copious. On the twentieth day of the exhibition of the drug, there was a papular erythematous rash on the extensor surfaces of the arms; this spread to the flexor surfaces, and also affected the calves. The antipyrine was omitted. On the fourth day the rash had almost gone, leaving only slight redness and desquamation. The patient had a relapse of fever, and was again treated with antipyrine without suffering from a return of the eruption. Dr. Claremont stated that antipyrine rash generally was of the papulo-erythematous type, and began on the extensor surfaces of the elbows and knees. It had been described in one case as commencing on the face, and in another as extending to the mucous membranes. Once vesicles had been present. Its most constant characters are its bilateral symmetry and its duration of about five days, irrespective of the continuance or withdrawal of the drug. The entire absence of subjective symptoms was exceptional. A scarlatiniform rash had been mentioned, but Dr. Claremont had been unable to ascertain that it was more than a transient flushing, such as is produced by belladonna.—*British Medical Journal.*

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[16] Besançon, M.: Endocardite ulcéreuse à point de départ génital chez l'homme. L'Union Méd., 1886, Nos. 100 and 101.

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[18] V. d. Velden, R.: Zwei Fälle von "Endocardite blenorrhagique." Münch. med. Wochenschr., 1887, No. 11.

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[23] Weichselbaum, A.: Zur Aetiologie der acuten Endocarditis. Wiener med. Wochenschr., 1885, No. 41.

[24] Ziegler, E.: Lehrbuch der speciellen pathologischen Anatomie. Fünfte Aufl., 1887, p. 39.

[25] Prudden, P. M.: An Experimental Study of Mycotic, or Malignant Ulcerative Endocarditis. American Journ. Med. Sci., January, 1887.

[26] Ribbert: Ueber experimentalle Myo- und Endocarditis. Fortschr. d. Med., 1886, No. 1, p. 1.

Clinical Department.

ABSCESS OF THE LUNG FOLLOWING THE RETENTION OF A NAIL IN THE BRONCHUS FOR A YEAR.[1]

By HOBART CHEESMAN, M.D.,

NEW YORK.

GEORGE B——, three years of age, was brought to me on September 25, 1888, having coughed up a nail the evening before. He was pale, emaciated, and feeble. The skin was hot and wrinkled, but moist with perspiration; the breath was very offensive, and there was being constantly coughed up a very fetid, purulent secretion, most of which was swallowed. Physical examination showed dulness in the middle and lower portions of the right lung, and numerous moist râles of various volume, together with tubular breathing, were audible in this region. The mother gave the following history, which was afterward corroborated by the father, as well as by several of the neighbors. About a year ago she had given, one day, the child a hammer and a nail, like the one coughed up, to play with. He was thus sitting on the floor when, beginning to cry and cough, she discovered that the nail had disappeared and that the child was struggling with something in its throat. The coughing and gagging continued for some time, and quite a little bloody matter was coughed or vomited up. After a few minutes the coughing mostly ceased for the time; but from this date the child began to be troubled with a cough which never entirely left him. At times it would continue very severe for days or weeks, and then there would be an interval of comparative relief and the general health would be good. After six or eight months had thus elapsed, it began to be noticed that the breath and sputa were offensive, and fever and sweating were also observed. Since then the patient had grown by degrees more emaciated and feeble, and the paroxysms of cough had become very violent and distressing. While the child was in one of these paroxysms the father lifted it by the legs, the head dependent, slapped its back between the shoulders rather vigorously several times, and with some impatience and desperation at the constant annoyance, and with a vague idea of aiding the child in what appeared to be efforts to expel something from the lungs. Upon putting him down the child appeared to be struggling with something in his throat, and the father, inserting his finger, extracted from it a nail, which was covered with a thick coating of iron rust and mucus. It was originally tin-plated. It measured an inch and a half in length, was cylindrical, with a sharp pencil-point, and a circular head five lines in diameter.

After the expulsion of the nail the paroxysms of cough were less violent, but pus continued to be expectorated in connection with the symptoms of septicæmia, and at the end of three weeks the patient died. The case is, unfortunately, incomplete from lack of an autopsy.

Poulet quotes an autopsy by Leuret on a lunatic, in which the right lung was normal except that there were some adhesions to the costal pleura. The left lung, however, was extensively adherent to the costal pleura, was hepatized and filled with tubercles, the majority of which were softened, and the lining membrane of the bronchial tubes was red and thickened. The trachea contained a nail an inch and a half long, the head of which was engaged in the left bronchus. The wall of the bronchus, which had been in contact with the head of the nail, was ulcerated and its inner layer destroyed; the nail was covered with mucus and oxidized. Autopsies in other cases in which foreign bodies of different kinds have lodged in the tracheæ or bronchi, and remained for considerable time, have shown that, in consequence, hepatization and cavities have resulted without the presence of tubercles, the cavities being simple abscess cavities. Such, probably, was the condition in this case. In many cases supposed to be of this nature, after expulsion of the foreign body, either spontaneously or by surgical operation, recovery has taken place. But in other cases of this character, where extensive local changes and profound constitutional disturbances have occurred, as in this case, death has resulted, notwithstanding the removal of the original cause.

It is not very uncommon, as is well known, for foreign bodies, such as pieces of bone of considerable size, to remain in the tracheæ or bronchi for many years, tolerance in the course of time, having been established, after which very little disturbance was occasioned by their presence. Sometimes in such cases, after years of tolerance, symptoms have recurred, resulting in the expulsion of the foreign body or in death. This is explained by supposing that the foreign body which, during the period of tolerance had become embedded or fixed, is again freed by ulceration of the enclosing tissues. Whether in the case before us the nail had all the time remained free, and was only waiting the classical procedure, to which accidentally the father finally resorted, to expel it, is, more or less, a matter for conjecture.

Foreign bodies, primarily embedded in the œsophagus, have been known to find their way by ulceration into the bronchi (Poulet); but such instances are rare and are accompanied by œsophageal symptoms. No such symptoms occurred in this case. The patient continuing to have a good appetite most of the time for several months following the disappearance of the nail, swallowed solids and fluids without appreciable difficulty from first to last. From this fact, and from the primary symptoms which have been described, it seems altogether probable that the nail found its entrance through the larynx, either at the instant or during the act of vomiting immediately following the accident.

One peculiar circumstance of the case is that the parents not once thought of connecting the cough, which began at that time and continued uninterruptedly during the whole year following, with the disappearance of the nail, until the father unexpectedly extracted it, as described, from the patient's throat. Several physicians at different times are said to have examined and treated the patient, in the meantime no one of whom ever expressed a suspicion of the nail as the cause of the cough. The child had always been robust and well previous to the accident, except that it had once had what the mother supposed was inflammation of the lungs, but from which it promptly and perfectly recovered several months prior to the accident.

[1] Read before the Manhattan Medical and Surgical Society, December 1, 1888.

MATERNAL IMPRESSIONS.

By A. B. LEGGATT, M.D.,

BABYLON, N. Y.

THE cases reported by Dr. R. Gross, of Eureka, Cal., describing the effects of maternal impressions are not unusual, although they appear to be doubted by some. Practitioners in the larger towns and cities are often called upon for surgical aid in such cases, but it is the rural physician who sees a large majority of them at birth. It is no secret that dentists decline to extract teeth for women while *enceinte*, if they are aware of their condition, for fear of hare-lip in the child. It is also a recognized fact that domestic animals are influenced in the same way. Horse-breeders too often take advantage of that fact, and obtain colts that can be sold as the get of a valuable stallion to which they are not related.

The following cases occurred in my former practice in a farming community during twelve years, and within seventy miles of New York. Mrs. M——, a young farmer's wife, was kicked by a cow that she was milking. Her upper lip was cut entirely through, and one upper incisor tooth was loosened. Six months after she was delivered

of a female child with hare-lip. Mrs. S——, a farmer's wife, mother of two healthy children, went into the fields after berries. One shoe—the right one—was run down at the heel, so that she walked all day on the outside of her foot, and subsequently had a swelled ankle. Eight months after she gave birth to a female child with club foot (*talipes valgus*) on the right side.

The following case happened in the practice of a medical brother in the same town, the subject of which is now a middle-aged man. A farmer's wife went to a spring for water very early in the morning. A huge bull-frog which lived in that spring had been on a nocturnal excursion and was returning home. He made his last jump for the spring, but instead landed in the woman's lap. She ran screaming to the house, and remained in an hysterical condition for hours afterward. Nearly nine months after, she was delivered of a male child that had a strong resemblance to a frog. His arms stand out from his body and his legs are flexed at the hip and knee, his head is turned back on his shoulders and his eyes are bulging. He walks partly erect with the aid of two canes. Mentally, he is quite intelligent.

Any country practitioner can furnish a list of cases like the above, with variations, and his only surprise will be that his city brother has not informed himself on the subject.

THE CURETTE IN PUERPERAL ENDOMETRITIS.

By C. M. HANSEN, M.D.,

CROOKSTON, MINN.

In The Medical Record of January 12, 1889, I read Dr. Grandin's plea for "Active Treatment of Puerperal Endometritis by the Curette," and the discussion about it in the Medical Society of the County of New York. I suppose most physicians will use the curette in cases of puerperal endometritis, when we know that pieces of membranes or of placenta are left inside the womb. Now Dr. Grandin goes farther, and, comparing the inside of the womb with the surface of a surgical wound covered with sloughing granulations, advocates the use of the curette in any case of puerperal endometritis, when it is caused by infection, without anything left of the placenta. Dr. Grandin will meet with some opposition on this point, mainly based on the fear of loosening the thrombi in the venous sinuses and opening new ways for infection; and I know that many of us in private practice hesitate in using the curette if we are sure that no portion of the placenta is retained. I had the same fears myself until my opinions were changed by a case in my practice, the history of which I give here as a clear case of septic infection of the endometrium treated by the curette, and, I hope, as an illustration to Dr. Grandin's paper.

Mrs. M——, aged thirty-two, married, had a miscarriage while stopping over in this town, June 29, 1888. She had given birth to one child, now aged five years; had since suffered from retroflexion of the womb, and had had frequent miscarriages, always in the first months of pregnancy. This last abortion, to which no doctor was called, occurred in the morning, and a fœtus in the third month with a complete placenta was expelled; there was insignificant bleeding and all would have been well if her husband had not been something of a domestic doctor, and a "meddlesome" one, too. In the evening after the abortion he gave her an injection of carbolized water through a common vaginal syringe, the nozzle of which he carefully managed to get through the open orifice into the cavity of the uterus. Hardly an hour afterward the woman had a chill and began to feel ill, had severe abdominal pains, and could not sleep all night in spite of the free use of opium. As she got worse steadily, I was summoned the next day. I found her pale, suffering from incessant pains in the lower part of the abdomen. Temperature, 104° F.; no peritonitic symptoms. By exploration the uterus was found retroflected, slack, large, and heavy. Considerable pain was excited by touching the fundus; no parametritis. The orifice opened sufficiently to admit a finger. No bleeding since the abortion; very little discharge now, but of fetid odor. She inhaled a few drops of chloroform, and was placed on her back, and after insertion of Sims' speculum, fixing of the cervix, and thorough cleansing of the vagina, I explored the uterine cavity with the finger, but found so far no loose pieces nor blood-clots. Then I irrigated with hot water, and scraped the whole inside with a large-sized curette. After scraping, I introduced, as usual, the uterine probe, wound with cotton and soaked in tincture of iodine. After these proceedings the patient went to sleep, and made a rapid and complete recovery, her temperature being normal the evening after the operation. By the scraping were removed only fresh and necrotic granulations, and by careful examination no trace of fœtal membranes nor of placenta were found in it. An interesting point in this case is, it seems to me, that the very moment of infection is known. The abortion may have been caused by the retroflexion of the womb, or may have been artificially induced, but the infection was surely brought by the nozzle of the vaginal syringe.

Allow me, at last, a suggestion, which I do not find mentioned in the paper nor the discussion. When endometritis sets in, the uterus becomes slack, and in this condition the use of the curette may be more difficult; therefore I would propose to begin the operation by gentle massage of the fundus uteri through the abdominal wall, until the womb is sufficiently contracted. A few drops of chloroform will in this case generally be needed. I would recommend the use of the largest curette possible, not only to get the work done thoroughly and in short time, but also for the sake of safety. If there is any danger in curetting a soft-walled uterus, the danger is surely less the larger the size of the curette.

LARGE DOSES OF CALOMEL IN PNEUMONIA AND CROUP.

By E. T. STRONG, M.D.,

ELIZABETHTOWN, N. Y.

In the winter of 1885 and 1886, I was led, by an editorial in The Medical Record, to try large doses of calomel in croupous pneumonia. The results were so good that I have continued to use it, the number of my cases being now about twenty. All were in the stage of exudation, with high or rising temperature. In age they ranged from eight to over sixty years. In severity, from cases which would have recovered under any treatment, to those that I considered desperate. In every case there was immediate improvement in temperature, respiration, and heart's action, subsidence of the disease in twenty-four hours, and, with one exception, rapid recovery, little or no stimulating or medication being needed. The exception was under most unfavorable surroundings, but was apparently convalescing, when purpura hemorrhagica set in, and the patient died from nasal hemorrhage. My usual and smallest dose was twenty grains every three hours, in most cases continued twenty-four hours. In one case, which I believed would be fatal, the patient took an initial dose of sixty grains, and thirty grains every three hours, until she had taken three hundred and sixty grains. There was no ptyalism in any case, and but moderate catharsis. One of the most remarkable features in every case was the rapid improvement in the heart's action.

I tried the same plan in three cases which I diagnosed as membranous croup. In two, the diagnosis was confirmed by expectoration of shreds of false membrane. In one of these patches of exudation were visible. In the third, an infant of nine months, I was unable to confirm the diagnosis.

All were reported as improving in breathing before the second dose, and all made a rapid recovery. I gave to an

infant eighty grains, in ten-grain doses; to a boy aged six years, one hundred and sixty grains, in twenty-grain doses; and to a boy of twelve years, only eighty grains in four doses. I never before had three consecutive recoveries from croup.

These few cases are not enough alone to prove the utility of the remedy, but at least they have convinced me that I can safely give, in similar conditions, doses that a few years ago I should have thought reckless.

SIMPLE HYPERMETROPIC ASTIGMATISM OF HIGH DEGREE.

By S. MITCHELL, Jr., M.D.,
HORNELLSVILLE, N. Y.

The following case presents some rather unique features. One being the high degree of hypermetropic astigmatism and the very slight asthenopic symptoms produced thereby. Gertrude C——, aged sixteen, a bright, active miss, of nervous temperament, but in perfect health, came to my office February 9, 1889, to consult me about her eyes; not because they gave her any serious trouble, but because the mother, who accompanied her, wished to know why her daughter was compelled to hold what she was reading in such close proximity to the eyes. Headache, or pain in the supra-orbital regions or about the temples, was not complained of, nor had there ever been any blepharitis, succession of styes, or any of the numerous affections of the lids, such as frequently accompany an eye strain. The mother informed me that a travelling optician (?) had at one time examined her daughter's eyes with the idea of fitting her with glasses, but for some reason did not, although he informed the mother that her daughter was "*probably* astigmatic." My first examination showed R. V. $\frac{20}{100}$, which was rendered worse by the weakest convex spherical lenses. With a +2 D. cyl., axis 90°, vision was $\frac{20}{40}$. L. V. $\frac{20}{40}$ was also made worse by convex sphericals, but with a +1.5 D. cyl., axis 90°, vision was $\frac{20}{40}$. At a second examination, two days later, both eyes being under atropine and accommodation fully suspended, vision was as follows: R. V. $\frac{20}{100}$ with a + 4 D. cyl., axis 110°= $\frac{20}{40}$. L. V. $\frac{20}{40}$ with a +3.5 D. cyl., axis 90°= $\frac{20}{40}$. By retinoscopy the illuminated portion of the retina appeared as a bright band extending vertically across the pupillary area, in which the vertical blood-vessels with a bright reflex were plainly visible, 30 inches from the eye. And of course it is almost needless for me to remark, that by rotating the mirror of the ophthalmoscope upon its vertical axis, the shadow moved quickly in the opposite direction from the rotation of the mirror; while if the mirror was rotated upon its horizontal axis there was no perceptible movement of the shadow. With the lenses above indicated, viz., a + 4 D. cyl., axis 110° before the right eye, and a + 3.5 D. cyl., axis 90° before the left eye, the direction of the movement of the shadow was not changed in either eye, although its movement was very much slower. Showing that even these lenses did not correct the whole error.

At the third examination, accommodation being fully restored, my patient's vision was best improved by the same lenses indicated, while the eyes were under atropine, giving her vision of $\frac{20}{40}$ with both eyes, and able to read J. No. 1 at 8 and 30 inches. Contrary to the ordinary rule, I did not deduct 1 dioptre in ordering the above glasses, but gave the full correction, which are now being worn with perfect satisfaction.

ALBINISMUS.

Dr. W. H. Dudley, of Newport, N. Y., writes: "The condition of albinism is one of such rarity that I am led to report two cases occurring in one family in this vicinity. The subjects are, a boy, aged about four years, and a girl baby, less than one. My attention was called to the boy by his father, who asked what could be done for his eyes, which he remarked were weak. His eyes presented the appearance of continual nystagmus and hippus when directed toward the light, which made him present the singular appearance so often given in descriptions of albinos. The irides are so devoid of pigment that the red reflex of the retinæ show through them to that extent, giving them almost the same appearance seen in the eyes of white rabbits. The eyelashes, eyebrows, and hair present the same colorless appearance as the skin which is entirely devoid of pigment.

"The parents are both of Irish extraction, well built, and have always enjoyed excellent health. While both parents have light complexions, their hair is dark chestnut, and eyes blue. All four of their grandparents, until recently, were alive, and nearly or quite eighty years of age, enjoying a comfortable degree of health."

Progress of Medical Science.

A New Method of Ophthalmoscopy.—Dr. Bellarminoff, of Moscow, recently demonstrated to the Berlin Medical Society a new method of ophthalmoscopy (*British Medical Journal*). The eye is first made insensible by cocaine; then a little plain glass is pressed against the cornea. Between the glass and the cornea a very fine zone of fluid is instantly formed. Thus glass, fluid, and cornea being transformed into one refracting medium, the refracting power of the cornea is wholly eliminated. The eye is thus transformed into a highly hypermetropic one. By this method it is very easy to see the fundus of the eye, and four or five persons can examine the eye at the same time. The method is likely to be of great service for the instruction of students, but it is not probable that it will be of much use to practitioners. Though new in its application to human beings, the method has, we believe, been suggested before, and tried upon lower animals.

Pathogeny of the Complications of Scarlatina.—Dr. Raskin has published some investigations he has made on the source of the malignant complications of scarlatina. In uncomplicated cases of the affection he has never been able to detect streptococci in the blood or, in fatal cases, in the organs (*The Lancet*). Streptococci never appear in the skin, and they were only found in two cases out of eighteen in the desquamation. These streptococci, when inoculated into animals, only produced the ordinary results of streptococci obtained from other sources. It is, he says, probable that such complications as inflammation of the glands, phlegmonous cellulitis of the neck, suppurative, and perhaps serous, inflammations of joints, broncho-pneumonia, and purulent otitis are due to a secondary infection by means of chain-like cocci. It is not possible to say the same regarding diphtheria. Though streptococci are found very constantly in diphtheritic membranes, they are not generally admitted as having a causal relation to the disease. Dr. Raskin has also never been able to succeed in inducing diphtheria by inoculating mucous membrane or the raw surface of sores with streptococci; a specific form of bacillus has, moreover, been found in diphtheritic tissues by Löffler and other observers; and it is difficult to understand how the same micro-organism (a chain coccus) can set up two such different diseases as diphtheria and suppurative inflammation. According to the author's researches, secondary suppurative processes are set up by chain cocci, which may or may not be associated with other micro-organisms—staphylococci in otitis, and micrococcus pyogenes tenuis in pyæmia. These organisms enter the system through the scarlatinal ulcers of the throat, and make their way to distant parts by means of the lymphatics. There are two especially favorable conditions in existence—the readiness of these bacteria to travel along the lymphatics, and the richness of the pharyngeal tissues in these vessels. When streptococci enter the blood they

are disposed of in three different ways: (1) they may rapidly die and disappear without producing any further disturbance than some degree of pyrexia; (2) they may emerge from the vessels into the organs, and there set up suppurative changes; and (3) they may set up pyæmia and cause death. The morphological and biological relations of the streptococci examined did not differ from those of other streptococci. The practical advice which Dr. Raskin is led to give is to keep the mouth and the throat particularly clean, to be very careful as to the cleanliness of everything that is introduced into the mouth, and, to make assurance doubly sure, to use disinfectants.

Phosphorus Necrosis.—Dr. Magitot read a paper recently before the Paris Academy of Medicine, on phosphorus poisoning, and particularly phosphoric necrosis, of which the following is an abstract (*The Lancet*): Owing to the number of accidents that have occurred, many of which were fatal, among the workpeople engaged in the manufacture of lucifer matches, and the Prefect of Police having applied to the Council of Hygiene for its opinion and advice, Dr. Magitot was charged to report on the subject. The author reviewed the inquiries undertaken during the last forty years by divers physicians and hygienists, and cited the attempts that have been made to remove the dangers incurred by the working-people in phosphorus manufactories, and particularly those of lucifer matches, but which have proved of no avail, as shown by the continuation of the accidents. In the second part of his report, Dr. Magitot studied the pathogeny of these affections, such as intoxication, action on the respiratory passages, and particularly the necrosis which mutilates or kills the workmen. According to a large number of observations in France and elsewhere, the author believes himself justified in regarding as inseparable from the production of necrosis the penetration of the irritating vapors of phosphorus through dental caries, of a kind which he designates under the significant name of "penetrating caries." It is an exclusive pathogeny, which Dr. Magitot claims to prove the value of by the facts which he had collected, and which is in contradiction with the ancient theories which he refutes, viz., that of the Germans, or the theory of the elective action of phosphorus on the bones (Lorinser), and that of the gingival and periostic medium defended by MM. Trélat, Lailler, etc. The following prophylactic measures are proposed by Dr. Magitot in view of preventing the accidents attending the manufacture of phosphoric substances. These are the perfecting of the means of ventilation, the isolation of the different departments of the manufacture, and the suppression or the neutralization of the phosphoric atmosphere of the workshops. For the individual hygiene of the workmen the following rules should be observed. The interdiction of the entrance to the manufactory of all individuals whose health or constitution is defective, and particularly if they are suspected of being threatened with necrosis, as may be judged by the state of the mouth, and the immediate dismissal of all persons bearing predisposing lesions. Under these conditions M. Magitot affirms that, in anticipation of the realization of the wish, so often and so fruitlessly expressed, for the substitution of red phosphorus for white, we may certainly and radically realize the suppression of all danger for the workmen, and, in particular, that of phosphoric necrosis.

The Rational Treatment of Strictures of the Male Urethra.—In a communication published in *The Post-Graduate*, Dr. J. H. Girdner states that, "The so-called gradual dilatation treatment is a misnomer as applied to strictures of the penile portion. It conveys only the idea of stretching, while the most important element in it is the pressure it exerts on the connective tissue surrounding the tube. One of the simplest and best known laws of nature is that pressure on a part causes absorption. We, therefore, take advantage of this law, and of the fact that the tissues around the penile portion of the tube are comparatively firm, and offer a certain amount of counter-pressure. It is his rule, also, to aid this counter-pressure by allowing each instrument to remain in the urethra for five minutes or more, and during this time to make gentle but firm pressure over the seat of the stricture by squeezing the penis at this point between the thumb and finger, carrying the manipulation all around the organ. In cases in which the deposit of cicatricial tissue was so large that it could be felt as a small, hard tumor around the point of stricture, he has been able to note its gradual disappearance from day to day under this treatment. After much experience with this method, he has yet to see a stricture of the penile portion which failed to yield to it, and when dissipated in this way the stricture has not returned in two, three, and five years after all treatment was discontinued, as is proven by some of his own cases. This he holds to be the only rational and successful treatment of strictures in the penile portion. With regard to stricture of the deep urethra, the author says that, gradual dilatation and pressure, so successful in the penile portion, will cure only a limited number of strictures when they are situated in the bulbous and membranous portions. The reasons for the failure are, because strictures in these portions are, as a rule, very tight, the open space around the tube here allowing of a large deposit of connective tissue; and, furthermore, this same laxity of the surrounding tissues prevents us from getting the counter-pressure, when solid sounds are passed, which the more compact tissues around the penile portion offers, and the location of the tube here also prevents us from making counter-pressure by proper manipulation, which we found so useful in the penile portion. Except, therefore, in cases in which the stricture is of recent formation, with only a small amount of cicatricial tissue opposite the point, gradual dilatation and pressure will prove, at best, only palliative in strictures of the deep urethra. Perineal section, or external urethrotomy, is an operation almost entirely void of danger, and, when properly performed, it may always be depended upon permanently to cure strictures in the membranous and bulbous portions of the urethra. It has been so successful in my hands that I have come to feel justified in promising my patients a permanent cure in ten to fourteen days from the date of the operation. External urethrotomy is free from the dangers and inconsistencies of the internal operation. Its proper performance contemplates and accomplishes the most simple and rational means of relief, which is to incise externally the urethral wall at the point of constriction, and introduce into the incision a wedge of sound tissue sufficiently large to restore the tube to its normal calibre. It is not difficult to accomplish this. His rule is to cut in the centre of the perineum, reach the stricture, freely incise it, cutting into the sound tissues on both sides for a fourth or half an inch; then pass from the meatus to the bladder a hard rubber catheter of the size of the normal urethra, and tie it in position. This causes a gaping of the walls of the incision, and prevents their primary union. The extent of this gaping is the correct measure of the wedge of sound tissue which is to be introduced into the circumference of the tube. This wedge is secured by the final union of the granulations which, by thus keeping the walls apart, are made to spring up on the two walls of the incision. After thirty-six hours the catheter is removed and the urine allowed to drain from the bladder through the wound, and this, together with the daily passage of a sound of the size of the normal urethra, is sufficient to insure the formation of a proper-sized wedge of granulation tissue. Strict asepsis is, of course, observed throughout the operation.

Tincture of Iron in Bright's Disease.—Dr. Wyss employs the ethereal tincture of the perchloride of iron, in doses of ten drops three times a day, in the treatment of chronic Bright's disease. He reports a large number of cases so treated, in more than half of which the albuminuria rapidly and completely disappeared.—*Der Fortschritt.*

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THE INFLUENCE OF DRUGS ON DIGESTION.

A SUMMARY of the observations made by Fraser, Petersen, Gluzinsky, Roberts, Fowler, Eccles, and others, upon the interference of remedies with digestion, is given in the last issue of *The Dietetic Gazette*. Professor R. H. Chittenden, of Yale, has also gone over this subject in a very thorough manner in *The Medical News* of February 19th. Our present knowledge, therefore, of the influence of drugs in promoting or retarding gastric digestion is fairly complete. Some of the facts that have been thus collected are extremely important, and should be kept in mind in the ordinary prescribing of remedies.

Salivary or amylolytic digestion takes place best in a neutral medium, and during the first five to thirty minutes after ingestion of food. Amylolytic digestion also occurs in the small intestine by virtue of the pancreatic, biliary, and enteric diastase.

This digestion is helped (according to artificial tests) by minute doses of mercuric cyanide, by arsenious oxide, and ammonium arsenate, by small amounts of tartar emetic, potassium chlorate and sodium chloride, and of many of the bitter alkaloids like quinine and morphine.

Large amounts of almost any germicidal agent decrease the activity of starch digestion; the mercuric salts being especially active. Arsenious acid, strychnine, antipyrin, and antifebrin have a retarding influence.

The proteolytic or peptic-hydrochloric acid digestion, which takes place in the stomach, is also much influenced by various drugs. The ordinary and average percentage of HCl in the gastric juice is twelve per cent., but pepsin may act more energetically, according to Chittenden, in a less amount of acid.

Observers have found many more substances which retard peptic digestion than they have of those which accelerate it. Among the latter, arsenious acid and arsenic acid are especially mentioned. Paraldehyde and thallin in small doses increase peptic action, as does also sodium chloride.

Among substances that retard digestion are nearly all the metallic salts, including those of iron and mercury; the alkaline chlorates, nitrates, and sulphates, nearly, if not quite, all the alkaloids, including strychnine, quinine, atropine. Alcohol holds a peculiar position in regard to digestion. Says Professor Chittenden: "The results of many experiments have shown plainly that the presence of *alcohol* impedes the proteolytic action of pepsin, even though it is present in comparatively small quantity; but as Gluzinski has shown, alcohol rapidly disappears from the stomach, even 100 c.c. of twenty-five per cent. alcohol disappearing inside of fifteen minutes. While in the stomach, alcohol undoubtedly retards the solution of proteid matter. Schütz finds that two per cent. has a retarding action, while ten per cent. causes a very great retardation, and fifteen per cent. allows only a slight digestive action. Bikfalvi finds similar results, as do likewise Ogáta and Klikowicz. The disappearance of the alcohol, however, is followed by the secretion of an active, strongly acid gastric juice, which continues generally long after the food is entirely digested. Hence, under the influence of alcohol, there is often an accumulation of large quantities of fluid in the stomach, frequently colored yellow by bile. With small quantities of alcohol, therefore, especially with an abundance of food, there is an undoubted stimulation of proteolytic action, induced mainly, if not wholly, by the increased secretion of hydrochloric acid. Under such circumstances the first stage of retardation is hardly to be considered, since the alcohol disappears so rapidly. With large amounts of alcohol, the mechanical functions of the stomach are interfered with, and thus the food compelled to remain a much longer time in the stomach than normally."

Soda-water, carbonic acid water, tea, coffee, and spring water are found to have no appreciable influence on stomach digestion. It is to be borne in mind also that some of the drugs which cause retardation of digestion are very rapidly absorbed and may act in a measure like alcohol, promoting digestion indirectly after their absorption by stimulating the heart or nervous system.

The general conclusion, however, that one must reach from a survey of the work we have just been reviewing, is that medicines injure the stomach, unless carefully given. Thus the conclusions of science are quite in harmony with the common sense of mankind.

THE FREQUENCY OF LOBAR PNEUMONIA IN YOUNG CHILDREN.

IT is very commonly supposed that lobar pneumonia is a disease peculiar to adults and older children, and that it occurs very rarely, if ever, in infants or children under four or five years of age. So common, indeed, is this belief, that the term pneumonia in children is usually held to be synonymous with catarrhal or broncho-pneumonia. It is even said that the anatomical structure of the child's lung is such as almost to preclude the possibility of fibrinous pneumonia, or at least to predispose very strongly to the occurrence of broncho-pneumonia.

That the disease is less common in children than in adults is most certainly true, yet there are not wanting those who maintain that it is of much more frequent occurrence than is generally supposed. Dr. Guaita has recently published some statistics from his own practice which led him to conclude that true croupous pneumonia in infancy is not a rare disease (*Archiv für Kinderheilkunde*, vol. x., No. 1). Of one hundred and thirty cases of pneumonia occurring in children under three years of age, he reports forty-five which presented all the symptoms of the croupous variety. Unfortunately, however, he relied wholly upon the clinical signs for his diagnosis, not having had the opportunity of confirming this diagno-

sis by post-mortem examination, consequently his statistics are of comparatively little value in settling this disputed point.

At a meeting of the New York Pathological Society in October last (THE MEDICAL RECORD, December, 1, 1888) Dr. L. Emmet Holt reported a case of primary croupous pneumonia in a child two years of age, in which the diagnosis was confirmed at the autopsy. In the discussion following, Dr. Prudden said that he had seen but four cases of genuine acute lobar pneumonia in children, three years of age and under, in a large number of post-mortem examinations conducted by himself and Dr. Northrup with a view of studying the lesions of pneumonia in children.

Although possibly of no very great practical importance it would yet be a matter of considerable interest to determine positively the relative frequency of these two forms of pneumonia in infants and young children, and it would seem not to be a matter of great difficulty to do so, if the statistics of post-mortem examinations in children's hospitals were carefully studied.

HOSPITAL ACCOMMODATIONS IN NEW YORK.

AT the last anniversary of the Academy of Medicine the incoming president uttered some very sensible words concerning the adequacy of agencies existing in our city for the treatment of the sick. He showed that the supply is in some directions equal to the demand, and in other directions is in excess thereof. This is particularly true with walking cases. A man with a deformed chest can nowadays make a respectable living by hiring out to teachers of physical diagnosis at our many institutions. If a man have some rare disease there is a strife over his body to which the contention of Michael and the devil over the body of Moses affords but a faint parallel.

A few days after the address above alluded to appeared in the daily papers, a layman replied with a communication in which he denied the truth of the statement made concerning hospital accommodations. He instanced a case for whose admission he had applied to several hospitals, but in vain. His argument, therefore, seemed to have a basis of truth. In this particular case an explanation was easy. The patient presumably, from the account given, was suffering from chronic rheumatism, and it is very easy to see how our large institutions, with their active medical services, might have been unable to accommodate this particular case.

A review of the hospital and dispensary history of the last few years shows that the new institutions, instead of occupying fields of usefulness now vacant, have been made to needlessly duplicate existing agencies. The medical needs of Lenox Hill did not require the establishment of the Presbyterian Dispensary, nor those of the West side that of the Vanderbilt Clinic. Both regions were well supplied before. The same observation would hold true, though perhaps to a less degree, of other quarters of the city. There is in our large hospitals ample accommodation for all cases of acute illness. Infectious diseases are directed elsewhere. Our needs lie now rather in the direction of accommodations for chronic cases of a general nature. We should have a private institution for diphtheria cases. The initial step has already been taken in this enterprise. We need a large institution for phthisis cases—away from the heart of the city, and built, perhaps, on the small pavilion or cottage plan. But let us have at present no more dispensaries. We have enough now to supply the wants of double our present population.

THE PATHOGENY OF ADDISON'S DISEASE.

THE definition of Addison's disease is tolerably clear, but much confusion still exists in the minds of many as to the true nature and pathogenesis of the affection. As is known, it is a disease characterized primarily by a marked and constantly increasing weakness, not necessarily associated with any emaciation, pains in the epigastric and lumbar regions, sometimes shooting to contiguous parts, vomiting, and other evidences of digestive disturbance, a weak and small pulse, dyspnœa, and usually, though not invariably, a bronzing of the skin and mucous membranes. Associated with these symptoms there is some lesion in one or both, almost invariably the latter, of the suprarenal bodies. The dark coloration of the skin, although the most characteristic, is not the most constant symptom of the affection. It often does not appear until the other signs of the disease have existed for quite a length of time, and in a not inconsiderable proportion of cases it is absent throughout the whole course of the disease. This is due possibly, as Jaccoud has suggested, to the fact that it is a late symptom, and thus the patient may die from asthenia before sufficient time has elapsed for the pigmentation of the skin to take place. At the autopsy, however, in these cases the adrenals are found to be diseased, so that the affection is to be characterized as true Addison's disease, despite the absence of the bronze discoloration.

In a recent lecture (*L'Union Médicale*, December 27, 1888) Professor Jaccoud recalls the views which he expressed a score of years ago, and which, with some modifications, he still holds, concerning the pathogeny of the affection. It is not, he maintains, the lesions of the suprarenal bodies *per se* upon which the complex of symptoms depends, but rather upon the secondary changes in the semilunar ganglion and solar plexus resulting from these lesions. This portion of the sympathetic system, lying between the two adrenals, is directly affected by disease of the latter. The ganglia are sometimes found to be actually diseased, but often it is only in the nerve terminations in the adrenals that lesions exist. The cardiac and respiratory symptoms, and the epigastric pain, are explained by the connections existing between the pneumogastric nerve and the abdominal sympathetic. The bronzing of the tissues is the result, the author holds, of trophic disturbances dependent upon the sympathetic lesion. The pigmentation comes from the blood and occurs through the lesions of the adventitia of the arterioles, and even of the media as well as in the larger vessels. This explains the late appearance, or even absence, of the tegument discoloration. There is no peculiar lesion of the suprarenal bodies, Jaccoud maintains. It is usually a process resembling, if not identical, with tuberculosis, such as was described by Addison, but it may be of any other sort, even simple atrophy. The nature of the lesion is of little moment, the essential fact being some disease of the suprarenal bodies, leading to

changes in the abdominal sympathetic, with the fatally progressive symptoms depending thereon.

Addison's disease has usually been considered to be a disease of adult life, but this need not necessarily be the case. Instances have been reported in which there was discoloration of the skin in young infants, and at the autopsy the adrenals have been found to be diseased. The gross appearance was usually that of tuberculosis, though tubercules were not always found on examination under the microscope. But, according to Jaccoud, these are cases, nevertheless, of true Addison's disease, and accepting the views above referred to, there would seem to be no reason for regarding them in any other light. In accordance with this theory, age and the nature of the lesion are unimportant, the changes in the adrenals and the symptoms resulting therefrom constituting the affection going under the name of Addison's disease.

MEDICAL EXAMINING BOARDS AND MEDICAL COLLEGES.

AFTER Virginia got her State Examining Board, one of the medical colleges of the State undertook to amend the law so as to exempt the graduates of State institutions from its workings. The college in question was justly subjected to criticism and ridicule. Now it seems that a similar move is being undertaken by one of the State medical colleges of Minnesota.

Such exceptions, it is easy to see, are simply asked in the interests, pecuniarily, of the local medical colleges, and if allowed would render the work of State examining boards a farce. If local medical colleges are afraid to have their graduates go before an impartial board, they had better go out of the business.

This movement on the part of certain medical colleges to secure exemptions for their graduates from the registration laws seems to be growing in popularity.

We trust that the Minnesota Legislature and profession will put a quietus on the efforts of the colleges in that State.

FREE WINTER BATHS.

OUR Legislature seems to be in a generous mood with the public money just now, and we trust that some measures will be taken looking to the establishment of free warm baths for the poor population. If they need facilities for ablution in summer, much more do they in winter. In the warmer days most anyone can take some sort of a bath, even if he has only half a pail of water, but this is manifestly impossible in the winter weather. It is during this season that we often have some of our most severe epidemics to combat, and personal cleanliness becomes under those circumstances a powerful antagonist. We do not at this moment recall which city department has charge of the summer baths, but it seems as if all the city's free-bathing facilities might be placed with propriety under the control of the Board of Health.

The expense of maintaining such institutions would, of course, be considerable. In summer the water costs nothing. Nature furnishes that. The requirements of winter baths would necessitate steam-power for pumping and heating, and a more durable and elaborate structure. It would be possible to rent or buy large houses or unoccupied buildings in various parts of the city, in which large shallow tanks could be constructed and filled with water which could be easily steam-heated. Such buildings should be centrally placed in the tenement-house districts and kept open evenings, and possibly some hours on Sunday. Being entirely supported by public money, no private objection could be interposed against this last feature. It would be a practical illustration of the truth that cleanliness is next to godliness. The whole project would be a working illustration of preventive medicine. A warm bath, with careful clothing of the person afterward, will relieve many of the ills of exposure to cold and wet, and may break up many bodily changes which, if unchecked, would lead to acute pulmonary or other disease.

All such incentives to greater cleanliness must not be measured only by their immediate effects. They rouse aspirations after better things in other directions. An officer of one of the Bowery club-rooms for young men recently told us that one effect of membership was to lead the frequenters of the rooms to look for boarding places in better quarters than the ones with which they had formerly contented themselves, and to improve their *moral* generally. Along this line would the effect of free warm baths work itself out.

SEXUAL PERVERSION AND THE WHITECHAPEL MURDERS.

THE Whitechapel murders have furnished a pretext for a large amount of medical, scientific, and ethical discussion. In particular, our Chicago confrères have betrayed interest in this subject, and their local journals and societies have been efflorescent in illustrations of sexual and moral turpitude. Dr. Reynolds has told of an "American gentleman, fifty years of age," with a passion for one-legged girls, and a Platonic indifference to his amiable and two-legged wife. This interesting specimen of the "American gentleman" could only satisfy his amatory feelings with monopedal ladies of uncertain virtue. The interesting details of this case were apparently listened to, and certainly discussed by, Dr. Fannie Dickenson, and others. Dr. Fannie asserts in her remarks that the subject brought up by the case of the "American gentleman" of fifty, "would bear much thought and action;" but along what lines we are not sufficiently or specifically informed.

Dr. Clevenger gave a demonstration of the proof, which to his mind exists, that the sexual sense is only an offshot and evolution of the sense of hunger; while Dr. Kiernan has contributed a paper on Sexual Perversion, as illustrated by the Whitechapel murders. In very much the same line as Dr. Kiernan's paper is one by Dr. E. C. Spitzka, on the Whitechapel Murders (*Journal of Nervous and Mental Diseases*). Both gentlemen concur in the view that the Whitechapel murderer was prompted to his crimes by sexual motives; and the sexual element is made the basis of much scientific and historical discussion. The occasion is used to relate some of the nasty tattle about the Cæsars, which that ancient gossip and so-called historian Suetonius has handed down to us. The story of Marshal de Raiz is told with a good many inaccuracies. For de Raiz was not the original and only Blue-beard, as is asserted, and instead of murdering nine hundred children, or one every third day for eight years, it is doubtful if the number reached one hundred—

which is quite enough, to be sure. Furthermore, the question of his murders being due to sexual motives is open to reasonable doubt, since de Raiz or de Retz had a mania for seeing Satan in person, and for making some compact by which he could obtain money and restore his wasted resources. The sacrifice of children was one of the things necessary to secure for him the personal recognition and favor of the devil.

We have digressed somewhat, simply to show that perhaps the discussions upon the Whitechapel murders have brought out the sexual element into somewhat excessive prominence, and have been, somewhat unjustifiably, made the excuse for retailing historic nastiness. The London criminal, it is said, killed only prostitutes of the lowest grade, and cut out their uterus, ovaries, and one kidney. This hardly furnishes absolute evidence of a sexual paranoiac, or, as Dr. Spitzka suggests, a degenerated sexual voluptuary. The man, indeed, showed a certain sense of moral fitness in the selection of his victims, and it might be supposed he is only a crazy reformer of personal immorality, and hopes to strike terror into the ranks of the depraved. In fact, it is quite positive that the Whitechapel murderer is a well-meaning, though excessively zealous man.

It is unfortunate that he has exercised his repressive measures on female prostitutes alone. For, if he could only pick out the corresponding class of male voluptuaries, whose soul is seated in the foreskin, and make his anatomical demonstrations upon them, his moral influence would be vastly extended.

But the Whitechapel murderer, if he is at heart a lover and reformer of his race, has taken means which society at the present time abhors, and which we trust we shall not be considered as seriously extenuating. His crimes are bad enough of themselves, and it is not necessary to add to their horror by hypotheses that are repugnant, disgusting, and as yet, not firmly substantiated by evidence.

HOW TO PRESERVE THE PHYSICIAN'S HANDS.

THE question of how to disinfect the hands when a surgical operation is to be performed having been quite well settled, a problem now arises of how to preserve the hands against the assaults of modern antisepsis. The frequent washing, scrubbing, and contact with carbolic acid, corrosive sublimate, etc., sometimes ends in making the hands rough, sore, red, and unsightly. At least this is the complaint of some of our German confrères to whom, if report speaks correctly, there have not descended hereditary protective influences from ancestral scrubbings. Dr. George Meyer, of Berlin, who has been himself a sufferer from "röthen Händen," describes a method of treatment which gives great relief. After washing the hands in soap and water, and carefully drying them, the following ointment is thoroughly rubbed in:

℞. Lanolin puriss..... 100.00.
Vanillin..... 0.1.
Ol. rosar..... gt. j.
M.

The vanillin and oil of rosemary are, of course, not essential. After the application the excess is wiped off upon a towel. Small tubes, like those used by artists for holding paints can be filled with the ointment, and it is thus made easily portable.

News of the Week.

THE ALUMNI ASSOCIATION OF BELLEVUE HOSPITAL MEDICAL COLLEGE.—The annual dinner of the Alumni Association of Bellevue Hospital Medical College was held at the Hotel Marlborough, on Saturday evening last. Dr. Lewis Hall Sayre, the President of the Association, occupied the head of the table and acted as toast-master. The following toasts were responded to: "The Clergy," by the Rev. William Lloyd; "The Alma Mater," by Professor Austin Flint; "The Alumni," by Professor Joseph D. Bryant; "The College of Physicians and Surgeons," by Dr. Frank P. Foster; "The University Medical College," by Professor Alfred L. Loomis; "The Post-Graduate Medical School," by Professor George B. Fowler; "The New York Polyclinic," by Professor Landon Carter Gray, and the "Medical Press," by Dr. George F. Shrady.

At the meeting of the Association, previous to the dinner, Dr. Lewis Hall Sayre was elected President, and Dr. A. M. Jacobus, Secretary. There was a large attendance of representative alumni, and the evening was, as usual, a very enjoyable one.

DR. ROBERT NEWMAN, of this city, in a reply to the open letter of Drs. Brewer and Otis regarding the treatment of stricture of the urethra by electrolysis, accepts the challenge, and will, in conjunction with the challengers, arrange the necessary preliminaries for an impartial test.

AT THE MEETING OF THE TRUSTEES OF THE UNIVERSITY of Pennsylvania, held last Tuesday, the following appointments were made: Dr. De Forest Willard, Clinical Professor of Orthopœdic Surgery; Dr. George A. Piersol, Professor of Histology and Embryology; and Dr. Samuel G. Dixon, Professor of Hygiene. It is stated that Mr. Henry C. Lea has given $25,000 to the Laboratory of Hygiene of the University of Pennsylvania on condition that an equal amount be obtained from other sources, and that a goodly proportion of this additional sum has been already raised.—*Medical News.*

DR. WILLIAM READ has presented the Boston Medical Library Association with his extremely valuable and rare collection of obstetric works. It comprises nearly four hundred volumes, and is thought to contain nearly everything of importance in French and English from the earliest times to 1861.

SAN FRANCISCO POLYCLINIC.—A Polyclinic has been organized in San Francisco, and will be opened on or about March 1st. The object is charitable, medicine and advice being furnished to the sick poor gratuitously.

OUGHT THE DOCTOR TO TELL A LIE?—This important ethical question has been raised in the *Medical Age.* Dr. E. B. Ward, after an experience of thirty years, asserts that "a doctor is morally bound to lie under certain circumstances." Dr. W. Flagler, from an experience of five years, opposes this view and argues in favor of *suppressio veri* as a substitute for bald falsehood. By the old rule, *experientia docet,* Dr. Ward is right. But one must be careful not to confound the just conclusions of matured experience with the mental phenomena of the degenerative changes of senility. So that it seems impossible to settle the question as yet.

THE DELUGE BEGINS.—*The Southern Medical College* held its Annual Commencement on March 2d. About forty students were graduated.

At the Annual Commencement of Rush Medical College, Chicago, held on February 19th, one hundred and twenty-seven candidates were graduated. At the Commencement of the College of Physicians and Surgeons, of Chicago, held on February 26th, forty-eight candidates were graduated.

The Commencement Exercises of the Meharry Medical Department and the Dental Department of Central Tennessee College, were held on February 21st, the degree of M.D. was conferred upon fourteen, and the degree of D.D.S. upon six candidates. The Dental Department of this College is the only dental school for negroes in this country, and the Meharry school is one of the two medical schools for negroes.

The New York College of Veterinary Surgeons held its Annual Commencement on March 13th.

The University Medical College of New York held its Annual Commencement on March 12th, and graduated a class of one hundred and eighty. The graduate address was delivered by Rev. Dr. Howard Crosby. The faculty awarded the prize of $200 for the candidate whose general standing was the highest, as shown by the record of his final examination for the degree of M.D., to B. N. Bridgman. The prize of $100 to the second best,and of $50 to the third best in their final examinations, were divided evenly between J. B. Long and S. J. Keefe. The Mott medals for the best and second best anatomical or anatomico-surgical preparations, and the best book of recorded cases and remarks of the professor at either of the surgical clinics, were awarded as follows: Gold medal, John M. Cooley; silver medal, Oliver K. Isham; bronze medal, D. D. Goldstein. The prizes for hospital appointments in the competitive examinations were awarded by choice as follows: First, H. L. Constable; second, W. E. Chase; third, M. M. Rodriguez; fourth, G. C. Pope.

Bellevue Hospital Medical College Commencement.—The one hundred and thirty-eight members of the Class of '89 of Bellevue Medical College met at the Carnegie Laboratory at 6 P.M., Tuesday, March 5th, and were formally made Doctors of Medicine by President Isaac E. Taylor. It was the twenty-eighth Annual Commencement of the College. Dr. Austin Flint of the faculty read the names of the graduates, who represent nearly every State in the Union. There are also members from Cuba, Ontario, Nova Scotia, and the Dutch West Indies. Dr. F. S. Dennis, Professor of Surgery, made an address, and the class proceeded to the Hotel Brunswick, where they dined in company with the faculty and several of the Board of Trustees. Austin Flint, Jr., Frederick S. Mandelbaum, Curtis C. Morgan, and J. R. Burdett, members of the class made addresses. Dr. Lewis Hall Sayre of the faculty responded for the alumni. The four members of the class whose rank entitles them to appointment in Bellevue Hospital are—Austin Flint, Jr., George P. Biggs, George D. Stewart, and David L. Rauch. James W. Cassel and Edward P. W. Leyba are eligible for appointment to vacancies. Five graduates received honorable mention—Frederick S. Mandelbaum, Curtis C. Morgan, J. R. Burdett, John H. Douglass, and Robert S. Primrose.

THE MIND-CURE AND THE LAW.—A patient of a "clairvoyant" doctor at Madison, Wis., has sued and obtained a judgment for $1,500 (affirmed in the Supreme Court), for having been rendered a cripple through treatment for rheumatism instead of hip-joint disease, his real ailment. The court overruled the plea of the defendant that he should be free from liability because the patient was fully aware of the peculiar "school" of medicine to which he belonged.—*Medical Index.*

ANEURISM OF THE SUBCLAVIAN (*Journal de Médecine*).—Dr. Saboia has laid before the Society of Surgery notes of a case of aneurism of the subclavian treated successfully by electro-puncture. The treatment was continued fifty-five days.—*Provincial Medical Journal.*

CATHOLIC FACULTY OF MEDICINE (*Gazette Hebdomadaire des Sciences Médicales*).—It is seriously proposed to establish a Catholic Faculty of Medicine at Lyons; a subscription list has been opened, and the first list of sums promised amounts to 400,000 francs.—*Provincial Medical Journal.*

THE AMERICAN PUBLIC HEALTH ASSOCIATION is in trouble over its Lomb Prize Essay on Practical, Sanitary, and Economical Cooking for Persons of Moderate and Small Means." The Secretary, Dr. Watson, gave the manuscript to the *New York Herald* on condition that that paper published it in full. He now complains that only a garbled report was published, with sensational headlines containing such expressions as, "The Devil sends the Cook, but the *Herald* sends forth an Antidote," "Indigestion Knocked Out," "Girls, the Road to a Man's Heart is through his Stomach," "An Abel Essay," "Miss Mary Hinman Abel took the Cake." etc. Dr. Watson has doubtless learned a great deal about newspapers in the last few weeks.

A MEMBER OF THE AMERICAN PHYSIOLOGICAL SOCIETY has offered $200 for the best research or researches bearing on one or more of the subjects treated below, viz.: "The rate of transmission of nerve impulses, afferent and efferent, and the duration of reflex and reaction time in the higher animals, especially man; also the conditions, normal and pathological, which alter such rates and times." The competition is limited to residents of North America, and the prize will be awarded for original work done after January 1, 1889. Communications should be addressed to Professor H. Newell Martin, Johns Hopkins University, Baltimore, Md.

BELLEVUE HOSPITAL EXAMINATION, FOURTH DIVISION.—The competitive examination to fill vacancies on the House Staff of the Fourth Division of Bellevue Hospital, will be held at Bellevue Hospital, Tuesday, March 26th, at 2 o'clock, P.M. Written application to appear before the Examining Board, endorsed by a physician of good repute, must be sent by each candidate to the undersigned, at least one day before the date of examination.—W. F. Fluhrer, M.D., Secretary, 32 West Thirty-third Street.

DR. ALVAN TALCOTT, of Guilford, Conn., who has given $25,000 to endow a professorship of Greek at Yale College, is one of the oldest alumni of that institution. Although over eighty years old he is still a practising physician, and it is said that every night he reads a hundred lines of Homer, in the Greek, before going to sleep.

THE JOHNS HOPKINS HOSPITAL, BALTIMORE, MD.—ARRANGEMENTS FOR THE OPENING, MAY, 1889.—The Johns Hopkins Hospital will be opened to the inspection of the public, before the reception of patients, during the week beginning May 6, 1889. On Tuesday, May 7th, at 11 A.M., there will be appropriate addresses in the main administration building. Invitations to be present will be sent to the authorities of the city and State, to those who have rendered special services in promoting the plans of the hospital, to professors of medicine and surgery, to the chief managers of other hospitals, and to the representatives of the press. On Wednesday, May 8th, between the hours of 12 noon and 6 P.M., the buildings will be open to the medical profession of Baltimore, Washington, and the State of Maryland, to medical students, to the managers of the benevolent institutions of Baltimore, to the ministers of all religious denominations, and to other persons whose pursuits have led them to take a special interest in hospital work. Cards of admission will be distributed in advance. On Thursday, May 9th, and Friday, May 10th, between the hours of 12 noon and 6 P.M., the public generally will be invited to visit the hospital. Cards of admission may be obtained, on the days named, at the entrance gate of the hospital, Broadway. On Saturday, May 11th, the faculties of the various institutions in Baltimore, the teachers of public and private schools of every kind, the students of the Johns Hopkins University, the Baltimore City College, the State Normal School, the Woman's College of Baltimore, and the Eastern and Western Female High Schools, will be admitted between the hours of 10 A.M. and 6 P.M. upon the presentation of tickets which will be distributed in advance. The dispensary will be opened for the treatment of out-door patients, Monday, May 13th, at 10 A.M. The hospital will be opened soon afterward for the treatment of patients sent to it by the head of the dispensary. Persons who wish to receive treatment in the hospital at their own charge, in whole or in part, may apply, by note or through their medical adviser, to the Director or to the Chief Physician, after May 1, 1889.

DR. FRANCIS J. EVANS, of this city, died on March 11th, at the age of thirty-five years. He was born in New York, and was a graduate of the Bellevue Hospital Medical College.

DR. THOMAS J. CARROLL died at his home in this city from an overdose of morphine, on March 10th. Dr. Carroll was twenty-eight years of age. He graduated creditably from the University Medical College in 1885.

A GREEK LETTER MEDICAL SOCIETY, the Delta Epsilon Iota, has been organized by the students of the Yale Medical College.

THE NEWPORT MEETING OF THE AMERICAN MEDICAL ASSOCIATION will at least be likely to be free from any local strifes and jealousies, for every one of the regular practitioners in town (fifteen in all), has a place on the local committee of arrangements, while three more of the committee are dentists. The local secretary first appointed having resigned, Dr. Valentine Mott Francis has taken his place. Dr. Horatio R. Storer, Chairman of the Committee of Arrangements, says: "'The meeting of the Association occurs nearly synchronously with the two hundred and fiftieth anniversary of the settlement of Newport. The city authorities will probably fittingly recognize the presence of the National Medical Convention at such a moment, the more cordially since the virtual founder of the colony, certainly its principal leader, John Clark, was a physician. It will add to the interest of the occasion that the now mayor of the city was one of the incorporators, in 1879, of the Newport Sanitary Protection Association, and is the parent of a rapidly rising physician in New York. The ancient name of Newport Island was 'Aquidneck,' or 'The Isle of Peace.' In view of this, it is to be hoped that the wisdom of the Association in turning away, the present year, from the mutual rivalries and the internal dissensions inseparable from the great centres of practice and of medical education, to what is virtually neutral ground, may be made manifest, and that the coming session may prove one of the largest, most harmonious, most scientific, and best contented meetings that has yet been held."

NEW INSANE ASYLUMS.—California is to have a new insane asylum in the southern part of the State, and a new branch asylum at Ukiah.

ANOTHER CASE OF DEATH FROM "CHRISTIAN SCIENCE" is reported at Pierre, Dak.

A PROFESSIONAL CARD.—The following is said, by the *Medical and Surgical Reporter*, to be clipped from an Arizona weekly of respectability:

"J. E. ——, M.D.,

PHYSICIAN AND SURGEON.

Health Officer, City of ——; for five years
County Physician —— County; Medical
Director Department of Arizona, G. A. R.;
Late Surgeon U. S. Army; for 20
years U. S. Examining Surgeon;
the largest Medical Practitioner
in Arizona, and charges fees
in proportion to his size.
His patrons will find
it to their advantage to keep
healthy.

Office and Dispensary, - - —— Street,
Corner of ——,
——, - - - ARIZONA.

"THE MARITIME MEDICAL NEWS" is the title of a new journal published bi-monthly at Halifax, N. S. The appearance of its first two numbers is very creditable and gives promise that the journal has before it a long and useful existence.

A BILL TO REGULATE THE PRACTICE OF MEDICINE IN MICHIGAN has been introduced into the Legislature. It provides for the appointment by the Governor of a board of six physicians to be medical examiners. Two are to be of the homœopathic school, two eclectics, and two regulars. All are to be graduates, but none can be connected with a medical college in any capacity. Any person practising medicine without a license from this board may be fined $100 or sentenced to jail for ninety days. All persons are regarded as practising who append M.D. or M.B. to their names, or direct, or for a fee recom-

mend for the medicinal use of any person any drug. Every person licensed must have attended three courses of lectures of at least six months each, and must be examined in the fourteen standard branches of medical practice. The examination fee is $10, and the license must be filed with the county clerk. The board can revoke a license for unprofessional or immoral conduct.—*Medical Standard.*

Pay for Expert Testimony.—Dr. G. K. Johnson, of Grand Rapids, has declined to testify before a United States pension examiner without compensation, and the question is to be settled in the courts.—*Medical Standard.*

Reviews and Notices of Books.

The Ear and Its Diseases: Being Practical Contributions to the Study of Otology. By Samuel Sexton, M.D., Aural Surgeon to the New York Eye and Ear Infirmary; Fellow of the American Otological Society; Member of the Practitioners' Society of New York, etc. Edited by Christopher J. Colles, M.D., Assistant Aural Surgeon to the New York Eye and Ear Infirmary. 8vo, pp. 461. New York: William Wood & Co. 1888.

The contents of this work are divided into four parts: Part I., of 60 pages, describes the Anatomy and Physiology of the Auricle, External Auditory Canal and Contiguous Parts, and the Membrana Tympani. Part II., of 50 pages, is devoted to the Etiology of Aural Diseases. Part III., of nearly 300 pages, gives the author's views on Wounds, Injuries, and Diseases of the Ear, and their Treatment. Part IV., of 50 pages, contains several Miscellaneous Articles, in connection with whose topics the author's name is, perhaps, most familiar to the general medical reader. Some of these are as follows: The Education of School Children with Defective Hearing, and the Extent of Deafness in the Schools; The Effect of High Atmospheric Pressure on the Ear in Tunnels, Caissons, etc.; The Effect of Submarine Diving on the Ear; Claims of Soldiers, Sailors, and Marines for Pensions on Account of Disability from Deafness.

The entire field of otology is not attempted in this admirable book, but such subjects have been embraced as will prove of general interest to the profession. The records of 10,000 aural cases, or about one-third of all such as have fallen to the author's practice in the last twenty years are made the basis of the work. The chapter on wounds and injuries of the ear is the most complete of any yet written, particularly those occurring in warfare, and are based on the author's own experience; an invaluable feature for reference for Army, Navy, and Pension Surgeons.

Chapter VI., on Catarrh of the Upper Air-tracts, and Chapter VII., on Oral Irritation as a Reflex Cause of Aural Disease, will bear careful and critical reading. From carefully recorded observations of some 1,800 cases of aural disease associated with severe dental irritation, the author finds 93 cases of acute, 33 of subacute, and 638 of chronic catarrhal inflammation of the middle ear; 235 cases of acute, 4 of subacute, and 401 of chronic purulent inflammation of the middle ear; there were 26 cases of severe purulent otitis, involving the mastoid cellules. The attempt to preserve very defective teeth, especially in run-down persons, is strongly advised against.

In impending periostitis externa and interna the author takes middle ground between the advocates of severe surgical measures and those who rely upon constitutional means of treatment; on the one hand he inveighs against the indiscriminate use of the leech and Wilde's incision into the mastoid periosteum, while on the other hand he finds from long experience that calx sulphurata holds its own in otitis media acuta non-suppurativa, as also in otitis suppurativa (perforans). The author calls attention to the relief that may immediately follow an incision into the attic in painful inflammation of the middle-ear, which is so common in childhood.

The medical profession will be under a lasting obligation to Dr. Sexton for his chapter of forty pages on the Operation of Excision of the Drumhead and Ossicles. Sir Astley Cooper once expressed the hope that deafness might be relieved by an operation having for its purpose the admission of sound through the round and oval windows, connecting the tympanic cavity and labyrinth, by means of a permanent opening in the drumhead. The operations of Heinly, Fabrizi, Brunner, Deleau, and Bonnafont did not prevent the opening into the drum-head from closing over by a secondary membrane. Wreden excised the manubrium mallei; Schwartze excised the malleus and incus in 1873, and neither of these operators succeeded as they expected; in 1878 Kessel, of Gratz, removed the drum-head, malleus, and incus in a case of chronic catarrh of the middle ear with closure of the Eustachian tube; the hearing-distance before the excision was ten centimetres, and tinnitus was very great. The final hearing-distance was ten metres, and tinnitus was slight. In 1881 Lucæ, of Berlin, detailed 25 cases of excision of drum-head and malleus, in none of which was there deterioration of hearing, and in many great improvement of aural power. In 1885 Lucæ had performed 53 operations of excision of drum-head and malleus, in 6 of which the incus was also removed. Since his first operation in 1886, with his own special instruments, the author has made over 40 excisions of drum-head, malleus, and incus, of 36 of which the details are given with painstaking accuracy. Over fifty per cent. of these cases were cured, while of the remainder all were improved, the degree of improvement being variable. Reproduction of the drum-head took place in none of the cases; and in none was there a recurrence of otorrhœa, or otalgia, or other distressing acoustic phenomena. The author believes that many deaf-mutes could be restored to hearing by this operation. It should be stated that slight swelling of the auditory canal, hemorrhage, and some pain may exceptionally be expected to succeed the operation, but that the excision is free from danger when ordinary precaution is observed. It is best undertaken under narcosis, and usually occupies ten to fifteen minutes after this is established. On the whole, Dr. Sexton has offered a book of definite character to the general medical reader of otological literature, while it cannot fail, by its advanced teaching, to be of interest to the otologist.

Die Entwicklung der Bakterienfärbung. Eine historisch-kritische Uebersicht. Von P. G. Unna Jena: Gustav Fischer. 1888.

In this brochure the author treats quite exhaustively of the history of staining methods for bacteria, and of the gradual development, during the first few years, of this process, so indispensable in bacteriological investigations. The history is an interesting one to all who watch the onward progress of scientific study in our day.

The Electric Illumination of the Bladder and Urethra as a Means of Diagnosis of Obscure Vesico-urethral Diseases. By E. Murry Fenwick, F.R.C.S. London: J. A. Churchill. 1888.

This work is the substance of two lectures delivered at the London Hospital and St. Peter's Hospital for urinary diseases. The author lays stress on improvements in the Nitze-Leiter method, and after giving a detailed description of the instrument itself, predicts its further development and universal use. The literature is entirely new, as, with the exception of Nitze's article, nothing has been written on this subject. It is profusely illustrated with wood-cuts.

Society Reports.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, December 26, 1888.

W. P. NORTHRUP, M.D., PRESIDENT, IN THE CHAIR.

DR. JOHN S. ELY presented a monstrosity of the type

MICROMELUS.

There was no history of the parents of the child. The trunk and head were apparently well formed, but the arms and legs were almost rudimentary as regarded their length, although in thickness they were nearly normal. The bones of the arm and forearm were present, and the hands, though small, were not especially misshapen, nor were the fingers webbed. In the lower extremities the femur was very short and much curved. Both bones of the leg were apparently present, although it was difficult to assure one's self of this by reason of the small size of the member. The great toe stood out at nearly a right angle with the inner border of the foot, and the feet were inverted so that the soles nearly opposed each other. The appearance of the feet and great toes suggested the normal condition existing in apes.

DR. L. EMMETT HOLT showed a series of specimens illustrating enlarged cheesy bronchial glands. The first specimen was one of

GENERAL TUBERCULOSIS, ENLARGED BRONCHIAL GLANDS, WITH ULCERATION INTO THE RIGHT BRONCHUS.

Female child, seven months old; family history unknown; three months before death she had an attack which was diagnosticated pleurisy, from which she never fully recovered. Had constant cough and considerable mucopurulent expectoration. There were continuous febrile symptoms for one month before death; the temperature range was between 101° and 104°, having the peculiarity that it was almost always higher in the morning than in the evening. There was progressive emaciation, moderate diarrhœa, no marked cerebral symptoms. There was much purulent expectoration. The physical signs gradually extended until there were signs of consolidation throughout the greater part of the right lung, in front and laterally, and scattered areas behind. Close to the spine, in the right interscapular region, there was a circumscribed area of marked dulness. The respiration here was exaggerated bronchial. Both were in striking contrast to the signs on the left side of the spine, and were interpreted to mean enlarged bronchial glands upon the right side. In the left lung there were no evidences of consolidation, but of a generalized bronchitis of the smaller tubes.

Autopsy, fourteen hours after death.—Brain: A few miliary tubercles were present, and a very slight amount of meningitis, chiefly over the right parietal lobe.

Chest—Right Lung: Upper lobe firmly adherent, and tears on removal. On section it shows many cheesy areas broken down in the centre, forming small cavities from one-eighth to one-half inch in diameter. One larger cavity near the anterior border filled with pus. The middle and lower lobes show many cheesy nodules, mostly smaller than in upper lobe. The intervening lung-tissue is in places consolidated and filled with miliary tubercles. Left lung: No adhesions; both lobes studded with small cheesy nodules, the longest being one-quarter inch in diameter, the intervening tissue being normal. Bronchial glands: They form a large mass above the right bronchus, the largest ones being nearly one inch in diameter; they are fused together. An ulceration exists in the right bronchus half an inch from the bifurcation of the trachea, which includes half the circumference of the bronchial wall. It communicates with a broken-down gland outside. Heart and pericardium normal.

Abdomen: The spleen was much enlarged (weight, seven ounces) and contained miliary tubercles. Many tubercles were found in the liver, also enlarged, and a few in the kidneys. The small intestine was healthy, except the ileum, which contained small tubercular ulcers in almost every Peyer's patch, and a very few elsewhere. The large intestine showed slight catarrhal changes only. Mesentric glands cheesy, the largest being half an inch in diameter. Stomach pale, otherwise normal.

A second specimen showed

GENERAL TUBERCULOSIS, TUBERCULAR MENINGITIS, CEREBRAL THROMBOSIS AND SOFTENING; ENLARGED BRONCHIAL GLANDS, WITH ULCERATION INTO THE RIGHT BRONCHUS.

Male, seven months old; family markedly tubercular upon the father's side; in fair condition until two months before death, when pertussis developed; attack rather more than average severity. Lost weight steadily, but had no other noteworthy symptoms till twelve days before death. His temperature was not high, only once touching 103°. A week before death the first signs of consolidation were found in the lungs; they were in the right upper lobe. Subsequently these signs were heard over the lower lobe and on the left side near the spine. At the last examination of the chest a circumscribed area of dulness was found in the right interscapular region. This was not accompanied by the peculiar respiration noted in the previous case, but by ordinary bronchial breathing rather louder than usual. The diagnosis of enlarged bronchial glands was made, although no dulness was found on the upper part of the sternum. The spleen was easily felt below the ribs. Cerebral symptoms were present during the last week; first drowsiness, the next day opisthotonos and an attack of convulsions, and later, complete coma; pupils dilated, responding sluggishly; slight convergent strabismus; paralysis of the lower half of the right face; right arm and leg rigid; knee-jerk normal, or slightly increased; rapid pulse, and Cheyne-Stokes respiration. Convulsive twitchings were present during the last six hours. Death occurred quietly.

Autopsy, sixty hours after death.—Brain: Extensive basilar meningitis, more marked in the left Sylvian fissure. Lobes matted together by lymph, and pia studded with miliary tubercles. A few tubercles over the convexity. A firm thrombus in the left middle cerebral artery, not decolorized; a spot of red softening in the central portion of the frontal lobe, nearly as large as hen's egg; ventricles moderately distended with clear serum.

Cord not examined.

Chest—Right lung: Old adhesion over middle lobe quite firm, slight recent adhesions over lower lobe. Upper lobe shows a few miliary tubercles on its surface, and small cheesy nodules in the interior; middle lobe completely broken in its centre, forming a series of small cavities, filled with cheesy material and some fluid pus; lower lobe consolidated from broncho-pneumonia, with here and there minute cheesy spots at the lower portion. Left lung: A few miliary tubercles on the surface; on section, several small areas of broncho-pneumonia, and two or three broken-down cheesy nodules near the root. Bronchial glands: Very much enlarged on the right side, forming a mass two inches long and three-fourths of an inch wide. They are all cheesy, and some are broken down. There was an ulceration into the right bronchus, occupying exactly the site described in the previous case, viz., half an inch from the bifurcation of the trachea. This was nearly one-fourth of an inch in diameter. Glands on the left side were slightly swollen, but not cheesy. Heart and pericardium normal.

Abdomen: Spleen much enlarged, fully four times the normal size, filled with miliary tubercles, and many small cheesy nodules. Liver pale, tubercles on surface, and a few in its substance. Kidneys: A few tubercles on the surface; quite marked; cloudy swelling of cortex. Stomach normal. Small intestine normal, except ileum; Peyer's patches swollen and red, and nearly every one contains one or two small, circular tubercular ulcers. Large intes-

tine: Half-a-dozen small ulcers scattered through the colon. Mesenteric glands moderately enlarged and cheesy.

A third specimen illustrated

GENERAL TUBERCULOSIS; PERSISTENT OPISTHOTONOS, WITHOUT LESION OF BRAIN OR CORD.

Male child, aged seven months, always delicate; family history unknown. Weighed eight pounds on admission in July, being then two months old. During the next three months gained two pounds, and then gradually lost it. Emaciating slowly till death. In October attention was called to the child by reason of opisthotonos, which had then existed some weeks. The neck was so rigid that the body could be raised by the head. This continued with slight variation, but never being completely absent until death. An irregular fever began early in October, which lasted six weeks, the temperature ranging from 100° to 103° F. Careful and repeated examinations were made during this period, eliciting only a moderate enlargement of the spleen and the signs of general bronchitis over the chest, mainly of the larger tubes. There were no cerebral symptoms. Quinine was without avail. Moderate gastro-intestinal catarrh was present, but hardly enough to explain the symptoms.

In spite of numerous changes in diet, and finally wet-nursing, he lost ground steadily. Toward the last he had no fever, but little cough, and the opisthotonos, although present, was not so marked as in October. At the last recorded examination of the chest, two or three weeks before death, the only signs present were scattered coarse râles. He died of exhaustion December 18th, wasted to a skeleton.

Autopsy, ten hours after death.—Brain and cord absolutely normal; they were examined with great care. Lungs: Left, quite large areas of consolidation in both lobes, chiefly posteriorly; on section, many cheesy nodules and a few quite large areas infiltrated with cheesy products. Right lung, small cheesy nodules scattered through the whole lung; many miliary tubercles on the surface; very little pneumonia. Bronchial glands are all enlarged and cheesy. They form a large mass surrounding the trachea and bronchi, but lie chiefly in front. Most of the glands are the size of a hazel-nut, and are beginning to break down. Heart and pericardium normal. Spleen about twice the usual size; many small cheesy nodules and miliary tubercles. Liver congested; a few miliary tubercles. Kidneys: Quite marked cloudy swelling; no tubercles. Intestines: A few small, circular ulcers in the lower ileum, and about a dozen scattered through the colon; moderate catarrhal changes through lower ileum and colon. Mesenteric glands size of a small marble, and cheesy. Stomach small, but mucous membrane normal.

Remarks.—In the first case the ulceration of the bronchus was probably produced by the breaking down of the gland exterior to it. The distribution of the inflammatory products suggested that this opening had existed for some time, and that the lesions in the middle and lower lobes had been set up by the aspiration of cheesy matter from the gland which had been discharged into the bronchus. The appearance in the left lung indicated this still more strongly; the matter having been coughed up into the trachea and then aspirated into the lung.

In the second case no cheesy gland existed near the opening into the bronchus, and this perforation was probably due to tubercular infiltration of the bronchial wall which had broken down.

In the third case the absence of all evidence of basilar meningitis at the autopsy was, in view of the persistent opisthotonos, rather surprising. The only explanation of the symptom which appeared was that it might have been reflex from irritation of some of the peripheral filaments of the spinal accessory by the tubercular gland which extended some distance into the neck.

DR. HOLT presented some additional specimens showing

DIPHTHERIA; MEMBRANE IN THE LARYNX, WITH NO CROUPY SYMPTOMS DURING LIFE; BRONCHO-PNEUMONIA.

A stout male child, aged sixteen months, was taken sick six days before death with high fever and sore throat. The temperature for the first twenty-four hours was 104° F.; during the next thirty-six hours it was low, ranging from 100° to 101° F.; during the last three days it ranged from 103° to 105° F. In the beginning both tonsils were swollen and congested, and a patch was seen upon the left. The next day one was noticed upon the right side also. There were no nasal symptoms and but moderate swelling of the cervical glands. The membrane in the throat did not spread beyond the tonsils. With the second rise of temperature the signs and symptoms of severe broncho-pneumonia developed which caused death. Throughout the attack there was no stupor, no laryngeal dyspnœa, and only slight hoarseness. Croup was not suspected.

Autopsy, twenty hours after death—Brain normal. Larynx: Epiglottis much swollen, especially at its borders, and is folded laterally upon itself. It is entirely covered with a thick adherent false membrane, excepting its base anteriorly. Thick membrane also covers the aryteno-epiglottidean folds. These are also swollen. The interior of the larynx is lined everywhere by a thin false membrane which extends into the trachea nearly an inch. It is very loosely attached in the trachea, but quite firmly so in the larynx. There was moderate congestion and swelling of the mucous membrane of the trachea and larger bronchi, but no more false membrane encountered until the third or fourth divisions of the bronchi were reached. Here the membrane was abundant, but loosely attached; it could be drawn out of the small bronchi in pieces of considerable length. This was present only in the bronchi of the right lung, none could be seen upon the left side.

Both lungs showed extensive broncho-pneumonia; nearly the whole lower lobe and the posterior part of the upper lobe being involved on the right side, and quite a wide strip along the posterior border of both lobes upon the left side. The lungs were everywhere much congested. The heart showed quite large decolorized clots in both auricles and ventricles, larger upon the right side; they were but slightly adherent and probably post mortem. In the kidneys there was well-marked cloudy swelling of the cortex.

The other organs were substantially normal.

THE PRESIDENT did not think that ulceration from the presence of enlarged glands was of very common occurrence. Referring to the case in which opisthotonos was present, he said that the causation of this symptom in young children was a subject of considerable interest. He had seen it in "marasmus babies" in which there was no brain or cord lesion discoverable post mortem. The only lesion constantly present, in the three or four cases which had come under his observation was gastro-enteritis. It was interesting also to note the occasional absence of symptoms in cases of glottic stenosis. He had that day removed from the body of a child a larynx in which there was a considerable amount of false membrane, as thick as blotting-paper, lining the opening in the larynx, and yet there had been no symptoms whatever of stenosis.

DR. JOHN C. PETERS said that to this Society belonged the credit of first establishing the diagnosis of diphtheria as a distinct disease in this country. A number of specimens had been presented here during the years 1842, 1843, and 1844.

DR. WILLIAM P. NORTHRUP presented some microscope slides of sections of specimens from three cases of

ACTINOMYCOSIS IN MAN.

Two of them were from two of the three cases operated on by Dr. Frederick Lange, of this city, and one was a specimen from Heidelberg. The ray fungus was well shown in one teazed unstained specimen, and differently represented by a hardened section, doubly stained, in a second.

One was from a boy, from Pennsylvania, without history showing source of infection. The tumors were in the mediastinum.

The second was from a butcher of this city, who asked if his disease was like the "little pearls" seen in the lower jaw of cattle. The tumor, from which the sections had been prepared, lay at the side of the thyroid cartilage, and was about the size of a horse-chestnut. It communicated with the jaw and a carious tooth by a sinus, along which were scattered small, yellow, seedlike bodies, having the size and general appearance of miliary tubercules.

The infection entered through the cavity of the carious tooth, and advanced to the region afterward indicated by the tumor. Whether there were other similar tumors within the thorax, in the posterior mediastinum, was not indicated by symptoms at the time of operation.

The specimen was presented through the courtesy of Dr. Lange as a "card specimen," and will be fully recorded elsewhere.

The Society then went into executive session.

Anniversary Meeting, January 9, 1889.

WILLIAM P. NORTHRUP, M.D., PRESIDENT, IN THE CHAIR.

DR. E. C. SPITZKA presented

A MONSTROSITY ATTRIBUTED TO A MATERNAL IMPRESSION.

The specimen was sent to him for examination by Dr. William P. Lowman, of Orangeburg, S. C., who had been called to attend a colored woman, with the following history. When she was about two months advanced in pregnancy, while passing through some woods, she suddenly came upon a buzzard, who, having caught a pig, had devoured the greater part of its head. She was greatly startled, and was almost immediately attacked with uneasy sensations in the hypogastrium. Two weeks later these culminated in violent parturient pains. The doctor was called in at this juncture and learned the above facts. He diagnosed incipient miscarriage, which he succeeded in preventing. One month (twenty-eight days) after this severe pains set in again, and the contents of the uterus were expelled. Fortunately Dr. Lowman was called in, and his careful examination led to the discovery of a remarkable body, which on first sight struck him as resembling the body of a bird, about the size of a robin, but lacking the head. Even the skin resembled that of a plucked bird. The umbilical cord was normally attached, and the placenta—about two and one-half centimetres in diameter—also appeared normal. The feet presented a spread claw-like appearance, imitating a bird's foot even to the subsidiary posterior digit with its long claw.

The monstrosity was in every respect a maldeveloped human fœtus. The shape of the bones where exposed, the formation of the ribs, the minute characters of the articulations, and the disposition of the fœtal membranes, all left no doubt upon this head. Nevertheless, the surface resemblance to a decapitated and plucked bird was very great. The skin everywhere, except at the points of the extremities, presented the "goose-skin" appearance. The neck was long, bent over, ventro-lateral, and its terminal tissues appeared to be rounded off smoothly. The upper extremities terminated at the distal humeral end, which was covered by a membrane continuous with the subcutaneous tissues. The disposition of the thighs and legs was marvellously bird-like, particularly in the contour of the muscular masses. The feet were human feet, exhibiting a tendency to syndactylism; but on the left foot was a claw, set back as in the bird's foot. The back of the monstrosity was prolonged into a caudal extremity very similar to what is seen in a bird. The rudimentary anterior extremities were so applied against the sides as to require no great stretch of the imagination to see in them the wing-bones. The chest also resembled almost exactly that of a robin.

Dr. Spitzka remarked that this case fulfilled one of the conditions demanded by the disbelievers in maternal impressions, namely, that the woman should have related her impression before the delivery of the fœtus. An interesting speculation might be indulged in regarding the unconscious psychological process and impression, which combined the impression of the *bird*, which had its head, with the *headless* character of the pig. It may be also questioned whether the—to a woman—familiar figure of a plucked bird was superadded. The case, the speaker said, offered a valuable and unimpeachable record of a maternal impression.

DR. WALTER MENDELSON said that what struck him as very singular was that the monstrosity did not resemble the large bird that the woman had seen. Might the occurrence not be explained by assuming that the woman's mind was dwelling simply upon the appearance of a bird, and her thoughts then unconsciously took the direction of what was most familiar to her, the dressed barn-yard fowl?

DR. SPITZKA agreed with Dr. Mendelson in this explanation. It would be impossible, he said, for a maternal impression to produce a being of a different order, such as a bird with a beak or with feathers. In reply to a question, he said that he did not know how maternal impressions acted. But the cumulative evidence in support of the opinion that they were efficient factors in the production of monstrosities, in certain cases, was too strong to be gainsaid. It is not a valid argument against a fact to say that we do not know how it is produced. We see actual lesions occurring in hysterical patients as a result of purely psychological causes, yet we cannot trace the mechanism of their production.

DR. FREEMAN presented the arm of an infant, four months old showing

ABSENCE OF THE RADIUS.

The first metacarpal bone and thumb were also wanting. Cases such as this, the speaker said, are not very rare, some thirty-five or forty having been reported. The history of the child's parents was unknown, and no cause for the deformity could be ascertained.

DR. JOHN S. ELY presented a heart showing the lesions of

MALIGNANT ENDOCARDITIS,

in which the source of infection was probably a urethritis, with the history and remarks given on page 287.

DR. W. P. NORTHRUP presented some specimens illustrating

HEMORRHAGE INTO THE SUPRARENAL BODIES, WITH DISCOLORATION OF THE SKIN,

incomplete septum ventriculorum, and sprue. A female child was admitted to the New York Foundling Asylum when one day old and was entered upon the books: "Condition poor—conjunctivitis—occasional cyanosis." There was a superficial ulcer over the soft palate extending upon the hard, which on the following day was pronounced diphtheritic. Two days before death the temperature reached 103° F., and dulness developed over the left lung, behind. A distinct exudate was seen upon the tonsils. The child died suddenly, on the eighth day of life, of heart failure, thought to be due to diphtheritic poison. Beyond occasional cyanosis there is no further note of its color during life. On autopsy the body was fairly nourished, the skin and subcutaneous tissue having a yellowish-brown or dirty yellow color; skin slightly mottled. The color was distinct and not to be overlooked. The trachea and bronchi contained a moderate amount of tenacious, dirty, frothy mucus; the mucous membrane was not congested and there was no exudate upon its surface. Upon the walls of the pharynx, the soft palate, and extending down the entire œsophagus, was an abundant growth of sprue or thrush (which had been called diphtheria during life). There was no ulceration, and the pellicle differed from the fibrinous exudate by appearing coarsely granular. This was best seen upon the œsophagus of the specimen. The stomach contained an in-

creased amount of tenacious, dirty mucus and gave no evidence of the presence of any vegetable growth. The jejunum and ileum contained dark-greenish masses of mucus in a dirty, frothy fluid. Follicles were not swollen. The bronchial glands were slightly enlarged. Left pleural cavity contained about ℥ jss. of a dirty brown fluid, in which were shreds of fibrin. The visceral pleura of the lower two-thirds was fringed with fibrin and overlay a densely solidified lung. Of the right lung but a small portion of the lower posterior portion wasaffected by congestion. The pleura and pericardium contained a small amount of dirty brown fluid.

INCOMPLETE SEPTUM VENTRICULORUM.

There was a direct communication between the ventricles of the heart, by an opening at the attachment of the aorta, to the left base and the valve-attachment of the right tricuspid.

The communication was through an interval left in the development of the fibrous auriculo-ventricular bands. The opening was circular, 6 mm. in diameter, looking into the left ventricle at the attachment of the aorta to the ventricle, its upper convex margin interdigitating with the lower convex attachments of two semilunar valves.

It looked into the right ventricle, having, upon its left, the inner portion of the ventricular wall, which was at this point prolonged into the infundibulum or conus arteriosus. Above and to the left it had the ventricle muscle. It had below and to the right the fibrous attachments of the tricuspid valves, opening behind the cusp, which had its attachment nearest the pulmonary orifice.

During systole, then, the tricuspid valves being closed, the blood would tend to escape behind the cusp, through the opening, in the manner of the coronary circulation behind the aortic valves. On the other hand, the contraction of the left ventricle would tend to equalize or overcome this pressure, until some peripheral embarrassment in circulation should disturb the equilibrium, when cyanosis would appear. Of such temporary disturbance the history makes mention. The foramen ovale was patent, in its posterior portion, about the normal degree. Ductus arteriosus was also pervious.

Kidneys were congested and contained urates in the papillæ which radiated from apex to base in reddish, fine lines. The suprarenal gland of the right side was increased in thickness, its middle third being dark and congested. The left gland was three centimetres long by rather more than one in thickness, pyriform in shape. The color was mostly opaque white, bordered on one side of its greatest enlargement by an irregular zone of recent hemorrhage. The gross appearance was that of cheesy degeneration of tubercle. Microscopic examination showed a small amount of normal gland-tissue in the smaller end of the pear-shaped body, a large mass in the middle of broken-down tissue in degeneration giving the opaque white color already referred to; beyond this there were signs of recent hemorrhage. In the midst of the broken-down tissue was a large vessel containing a thrombus. There was no tubercle tissue; the destruction of the gland was due to hemorrhage. In the congested middle zone of the right gland were numerous bilirubin crystals which showed distinctly in the specimen presented.

The anatomical diagnosis of the case is twofold. First, it is apoplexy of one suprarenal body and pigmented skin, in a child of eight days. It is not considered a case of Addison's disease. Apoplexy of the suprarenals is not among children regarded as rare by writers. Congestion and discoloration of the medullary substance is common, but, in Dr. Northrup's experience, apoplexy, with destruction of tissue and enlargement of the body, can be said to be rare. Second, the case is one of sprue or thrush, which was diagnosticated diphtheria, and malformation of the heart, with sudden death. There were patches on the tonsils and palate, which appeared to be pseudo-membrane to a man eminently capable of judging; and when the child died, suddenly, it was thought to be heart failure after diphtheria.

The microscope showed the fine, granular, grayish pellicle to be oidium albicans, growing upon the surface of the mucous membrane.

DR. L. EMMETT HOLT said that he had recently come across the statement that oidium albicans was not the fungus concerned in the formation of sprue, but that it was saccharomyces albicans, and he asked whether this was a fact, which had been affirmed also by others.

DR. MENDELSON said that when in Leipsic, in 1882, he remembered having heard the statement that the sprue fungus was not oidium albicans, but a mycoderma.

DR. HOLT asked whether Dr. Northrup had ever noted the presence of the thrush fungus in the intestinal canal.

DR. NORTHRUP replied that he had never seen it below the œsophagus.

The Society then went into executive session.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE HUNTERIAN ORATION AT THE COLLEGE OF SURGEONS —THE STRUGGLE FOR POWER AT THE COLLEGE—THE PROPER PERIOD FOR SURGICAL INTERFERENCE IN CASES OF ACUTE INTESTINAL OBSTRUCTION—A CASE OF EPILEPSY WITH OLFACTORY AURA—A CHAIR OF NEUROPATHOLOGY AT KING'S COLLEGE.

LONDON, February 23, 1889.

THE annual Hunterian Oration at the College of Surgeons was delivered last week by Mr. Henry Power. So many Hunterian orators have preceded him that Mr. Power might be excused had he delivered a very mediocre and dry address. He managed on the contrary to impart a little fresh life to the subject, and that, not by departing from it to discuss other topics, but by adhering almost strictly to his theme throughout. In these days of high-pressure education it is very salutary to be reminded that John Hunter did not begin his professional studies till he was nearly thirty years of age, but that his student career was prolonged for nearly eight years. Yet the facts he had to learn in anatomy and physiology, said Mr. Power, were comparatively few, while surgery was chiefly taught in a practical fashion. Hunter began life when the disposition to recur to experiment for the solution of difficult questions in physics and chemistry was familiar to all scientific men. Many qualities must be combined to make a good experimenter, and it was pointed out by the orator how these were united in Hunter.

One phrase in Mr. Power's oration—that if Hunter were now to return to life he would see vast improvements on all sides and find a profession fairly united—recalls another topic in connection with the College, viz., the protracted struggle between the Council and the Fellows and Members. During the last few days another step has been taken which must further embitter the quarrel. Finding that the Council of the College would not summon a meeting of Fellows and Members at the College, although requisitioned to do so, the Association of Members have taken the risk of summoning one on their own responsibility. The result of this is, firstly, that they have been informed by the Council that such a meeting is illegal and contrary to the by-laws, and will not be permitted, and, secondly, that the Council have taken effectual means to prevent the meeting from being held at the College by unanimously resolving to close the College on the day for which the meeting was summoned, viz., Thursday next. And so the controversy goes on.

What is the proper period for surgical interference in cases of acute intestinal obstruction? Dr. Richardson

thinks that an exploratory incision into the abdomen should be made when fæcal vomiting comes on. This, at any rate, is the view he put before the Fellows of the Medical Society of London, in a paper read at their last meeting. After narrating a fatal case of acute obstruction which had occurred in his own practice, he discussed the question of early operative interference. Milder measures, such as purgatives, enemata, massage, etc., might, he thought, be safely carried out until the supervention of fæcal vomiting. In the presence of this symptom, however, obscurity of diagnosis ought not to be allowed to stand in the way of an operation. Clinical experience showed that there was little chance of recovery when once stercoraceous vomiting had set in, and he maintained that it was a symptom of much greater gravity than would attach to the mere mechanical effect of obstruction. Symptoms of collapse did not contraindicate operative interference. The test proposed by Dr. Richardson did not meet with a very ready acceptance from the Society, judging by the utterances of those who discussed it. Mr. Edmund Owen remarked that the test was not applicable to a large class of cases in which the obstruction was high up, say in the jejunum. In such cases fæcal vomiting could not take place, and if they allowed the patient to go on while they waited for it, the patient's chances of recovery would be few. Mr. Bryant urged that in any case much valuable time would be lost by waiting for fæcal vomiting to come on; the surgeon should be prepared to operate directly he was satisfied there were symptoms of strangulation. Dr. Routh took up the opposite view and argued against too early operation. He had seen many cases recover without operation, although stercoraceous vomiting had occurred. He recommended a freer use of antispasmodics, such as chloroform and belladonna. Dr. Richardson, in reply, acknowledged that he had not mentioned the cases of obstruction high up, but such cases were very rare. His conviction was that fæcal vomiting was generally the first sign to impress the practitioner in attendance with a sense of the gravity of the case. If they trusted in the measures suggested by Dr. Routh, patients would often die. He admitted the value of belladonna and other drugs, however, in cases of gall-stone colic—a subject which he had not discussed in his paper.

At the same meeting of the Society, Dr. Hughlings Jackson and Dr. Beevor read notes of a case of epilepsy with olfactory aura. There was no anosmia, but only a disordered subjective sensation, viz., a horridly nauseous smell. Post-mortem, a small round-celled sarcoma was found occupying the anterior end of the temporo-sphenoidal lobe. Dr. Jackson observed that this was the first case on record in which this variety of epilepsy had been proved at the necropsy to be associated with actual lesion in the temporo sphenoidal region.

A professorship of Neuro-pathology has been created at King's College, and Dr. Ferrier, who has resigned the chair of Forensic Medicine, has been appointed to it. King's College is evidently determined not to be behind its rivals. The present is the third additional professorship which has been instituted within the last few years. The previous two were those of Clinical Therapeutics, to which Dr. Burney Yeo was appointed, and of Bacteriology —the latter being now held by Professor Crookshank.

DR. ALONZO CLARK AND MICROSCOPY; A REMINISCENCE BY ONE OF HIS CLASSMATES.

To the Editor of The Medical Record.

Sir: In The Medical Record of February 23, 1889, is an article which discusses the question as to who introduced the use of the microscope for the diagnosis of the different diseases of the human body. I cannot tell you anything that will be of value, but as we lived near together on the Green Mountain Berkshire hills of Massachusetts, and were in college together, I will make a short statement.

When I entered Williams College, in September, 1827, Alonzo Clark was in the senior class and criticised my first college composition. He graduated in September, 1828. When he left college he was said to be engaged to a Miss Sloan, a fine young lady of Williamstown, but she lived but a short time after he left college. I never knew of his being engaged to any other lady.

He was engaged in teaching some time after he left college, but I did not keep posted in regard to his location or his business; but in the winter of 1844 and 1845 I spent over two months in New York City, and met Drs. Parker, Watts, Clark, Wooster, and many of my medical friends. I attended with Dr. Parker several medical meetings, and spent some evenings with Dr. Clark at his office, where he showed me many microscopical specimens, and how he made his examinations. From what I gathered at that time from Clark, Parker, and others, I was satisfied that Dr. Clark was the first man to use the microscope successfully in diagnosing disease in New York.

I mention these things because we were both Green Mountain Yankees, raised only a short distance apart among the snowdrifts of Berkshire County hills, and there is no one now, perhaps, but myself who can tell these items of his history; for he would hardly tell anyone that he was born and raised in a poor little country mountain town, and that his only sweetheart resided in the finest house in Williamstown, just across the street from the West College, and at her death his matrimonial proclivities, so far as I know, ended.

Alonzo Clark was a good, quiet, sensible, hard-working, man, who did much for the profession. Clark and Parker both wore themselves out by long-continued hard work, and as we say, they both died with the harness on. I studied medicine with Drs. Parker and Childs, and demonstrated for Dr. Parker four courses of anatomical lectures, one course at Woodstock, Vermont, and three at the Berkshire Medical School in Pittsfield. Dr. Watts was his demonstrator before me, but they are all gone now; only three of my college classmates are now living, and no doctor but myself is living who graduated at Williams College before the year 1834. But there are twenty-eight preachers living who graduated before that time, showing that preachers are much longer lived than doctors, for it is likely that as many students studied medicine as divinity.

Of my college class four are living, myself, two preachers, and a lawyer. Of Clark's class there are five living, four preachers and a teacher. So we all go, one by one.

Very respectfully,

John Frissell, M.D.

52 Fourteenth Street, Wheeling, W. Va.

THE COLD WATER TREATMENT OF TYPHOID FEVER.

To the Editor of The Medical Record.

Sir: I have read with unusual interest the article on the treatment of typhoid fever by Dr. Baruch, published in your issue of February 16, 1889. The stupendous array of facts and figures there given certainly challenge attention, even if they do not carry universal conviction. It is to be feared they run too much athwart an easy-going routinism to do the latter. The popular prejudice against "cold water treatment," shared in no small degree by the profession, will probably continue to form a barrier to its general introduction, even under the most favorable circumstances. But typhoid fever, like most diseases of its class, flourishes most luxuriantly amid the squalor and filth of tenement-houses. In such houses there are neither the facilities nor the intelligence necessary to carry out such a line of treatment. If the wholesale slaughter of typhoid fever can be as nearly obliterated as these figures seem to indicate, then it may justly be said

that public charity should at once come to the rescue. But so long as the pauper sick are bandied about at the bidding of cheap ward politicians, or "knocked down" to the lowest bidder, as they are in Fort Wayne, there seems but little to hope for from this direction. In short, where the greatest need is the obstacles seem little less than insurmountable at present. Of course, this is a "job" for the humanitarian rather than the clinician; but the latter must take things as he finds them.

It would seem that Brand's prediction of a zero death-rate, contingent upon the commencement of treatment before the fifth day, is a very subtle refinement of therapeutics. The "cold water treatment" is not advised until the temperature reaches an elevation of 103° F. Now, a typical case of typhoid fever does not have such a temperature until the afternoon or evening of the fourth day. Hence the treatment is not advised until the fourth day, and yet it is fatal to a certain proportion if postponed until the fifth. It is certainly a very delicate adjustment of treatment when a patient is saved or doomed according as it is inaugurated on the fourth or the fifth day of a disease lasting a month.

That the alterations in Peyer's glands will not go beyond the stage of infiltration if treatment is instituted before this fateful "fifth day" is another prediction that raises very dubious questionings. This infiltration commences on the first day of the disease in a few glands, a few more being added each day as the disease progresses. It is hard to believe that necrosis can be entirely prevented after the fourth day, especially as the process is now known to be microbial in character. Patients recover, however, when the alvine discharges show the sloughs of many necrotic glands.

The principal criticism offered is that a little too much seems to be promised; but this is largely pardonable in the advocates of a method of treatment that has accomplished so much. One thing, however, seems clear, that unless the statistics quoted by Dr. Baruch can be offset by others or explained away (neither seeming an easy task), a new era has dawned in the history of typhoid fever. Our recognition of it appears to have been slow, but it ought not to be so from this time on. Let us look the facts squarely in the face. A mortality of only 1.7 per cent. in more than two thousand cases with strict cold water treatment, is an accomplished fact. If the present mortality of from twenty to forty per cent. continues, someone is responsible. If the physician is too blind to see the facts, or too timid to face a popular prejudice, the responsibility rests with him; if philanthropists will not provide the means for rescuing the indigent typhoid fever patient, it rests with them; while if the patient becomes recalcitrant, the matter is equally clear. Let it not be forgotten that if the present enormous fatality continues, it is, in the light of these facts, to be regarded as preventable loss of life; and that the responsibility rests somewhere, and is not difficult of location.

Respectfully,

G. W. McCarkey, M.D.

Fort Wayne, Ind., February 22, 1889.

"HOWARD'S METHOD" FROM A CLINICAL STAND-POINT.

To the Editor of The Medical Record.

Sir: I have read with interest your timely article in The Medical Record of February 23d, on the "Abuses of Etherization." Noting allusions in it, and in the discussion following its reading, to "Howard's Method" of treating suspended respiration, and having seen this method in practical use for several years, I think that possibly a few words on it from a clinical stand-point may not be amiss.

The articles which have appeared since Howard's was published in *The British Medical Journal* of November 17, 1888, show that forced extension of the head is not generally recognized as a remedy for dyspnœa or suspended respiration. As Howard states, the method is not "new." He uses this term in the title of his article because the explanation, viz., that forced extension of the head elevates the hyoid bone and the epiglottis, is the result of his recent work. Professor J. J. Chisolm, of this city, in an article on "Bromide of Ethyl" (*Marylana Medical Journal*, January 1, 1883), comparing ethyl and chloroform, says in regard to the latter: "Should loud snoring occur, force up the chin. This manipulation, by straightening the air-passages from the nose to the larynx, makes easy breathing. The forced elevation of the chin is far better in every respect than pulling out the tongue." In a monograph issued by him in the spring of 1888, he discusses this method more at length, attributing to "the overlapping of the epiglottis" difficulty in respiration, and the relief afforded by head extension to the fact, that by it "the whole front of the throat is pulled away from its posterior vertebral wall, giving the greatest amplitude to the laryngeal opening, and making a straight passage for the inspired air from the nose through the larynx into the lungs." He mentions some of the muscles connecting the inferior maxillary bone with the hyoid as being concerned in accomplishing this. He does not mention the hyo-epiglottic ligament, the "lower link" in the "chain," given by Howard.

In 1880, when I became Professor Chisolm's assistant, as a medical student, at the University of Maryland and at the Presbyterian Eye and Ear Hospital, what is now termed "Howard's method" was in constant use. Chloroform was the anæsthetic used for everything. In 1882 bromide of ethyl was substituted in very short operations, and the introduction of cocaine, in 1884, lessened, of course, the use of both drugs. So far as I can remember, ether has never been used at the hospital. During my nine years connection with the institution—for six of which I have been a member of the staff—I have not been unfortunate enough to see a death from anæsthetics. Should we ever happen to have a patient whose heart suddenly stops soon after the inhalation has commenced (due to sudden paralysis of the cardiac ganglia by the first vapor that reaches them, Bartholow), the exceptional record of our hospital will be broken. Such a case occurred in this city in 1883, and is reported by my friend, Professor J. Edwin Michael, in *The Medical News*, vol. xlii., No. 7. After a few inhalations the heart suddenly stopped, and could not be made to go again. No form of treatment that I know of could save a case like this. But the majority of deaths from anæsthetics do not occur this way. We read of sudden stopping of the respiration, or of a "gradual weakening" and "final cessation," of gradual "heart-failure," and so on. Pulling out of the tongue, cold-cloth flagellations, hypodermic injections, batteries, etc., are used to "rally the flagging vital forces," and at last death closes the scene. In your article you speak of the well-proven uselessness of all the above, and of some other means used to protect the patient. And this brings me to my real reason for writing this letter, to state how "Howard's method" is used at our hospital—with the result, we believe, of often preventing trouble during anæsthesia, and of curing it when it does occur.

A small pillow about ten inches long, six wide, and two thick, is placed under the patient's head at the commencement of the administration of chloroform. As he becomes unconscious this is withdrawn, and the head extended as far as possible without bringing it over the edge of the table. This is done whether respiration is easy or not. In the large majority of cases it remains easy and regular. The vital signs that are most carefully watched are the respiration and complexion. Not nearly as much importance is attached to feeling the pulse as to both of these. If our first alarm comes from the radial artery—*i.e.*, if the pulse suddenly stops—I do not believe much can be done. A close observation has convinced me that in most cases of "gradual heart failure," changes in the complexion, and in the regularity and depth of res-

piration, precede the "loss of arterial tone," "intermission of the pulse," and other things to which much importance is justly attached. I would not, however, undervalue the importance of watching the pulse, but I think that usually the face, or the respiration, will warn us of danger before the wrist will. If the face becomes livid, and the respiration stertorous, we extend, without an instant's delay, the head, to the utmost, over the edge of the table. Provided the respiration is full and regular, it does not seem to me that snoring is such a very dreadful thing as to demand the heroic measures you very justly condemn. Time and again have I seen this simple expedient restore easy breathing, and clear up a livid complexion.

In another class of cases we find a lessening in the depth of respiration, often preceded or accompanied by pallor. Soon the heart shows signs of trouble. The time to employ "Howard's method" is just as soon as this feeble respiration, or pallor, is noted. If we delay till the heart's action seems failing, we lose, I think, most valuable time. One or two deep inspirations will follow the extension of the head, and all will be well again. Just such a case occurred with me, while enucleating an eye, a few days ago. The breathing became feeble, with only partial expansion of the chest, while the head was extended on the table. Full extension at once fixed matters. If, in spite of this extension, the breathing does not at once become easy, and if the heart "fails" either after the respiratory and complexion changes, or simultaneously with them, the whole body is inverted, and head extension employed with the body in this position. My senior, Professor Chisolm, reported in your journal of January 21, 1888, a case illustrating this method of treatment.

These are practically the only methods we use. Only twice have I seen artificial respiration employed, and in only one of these cases—the little child whose case is the basis of Professor Chisolm's paper—do I think it did good. I believe it was largely instrumental in restoring this little fellow during his first collapse, though it was not employed later. I could mention many cases in which I have seen relief follow head extension, and several where difficult or stertorous respiration followed slight flexion from the extended position. My object, however, in writing is to try to emphasize, first, that head extension is serviceable in *keeping breathing* easy; and, second, that to relieve apnœa or dyspnœa it must be employed as soon as the signs of either appear.

Very truly yours,

HIRAM WOODS, M.D.,
Assistant Surgeon at Presbyterian Eye and Ear Hospital.
527 N. HOWARD STREET, BALTIMORE, MD., March 9, 1889.

A COMMISSION ON THE TREATMENT OF DISEASES OF THE LOWER ANIMALS has just concluded the first stage of its inquiries at the Ministry of Agriculture in Rome. The diseases to which oxen, sheep, and pigs are specially prone were considered in their therapeutic as well as prophylactic relations, and the reports embodying the results of investigations by experts were submitted to the Commission. Inoculation for charbon, on the Pasteur system, was the subject of animated discussion, resulting in not a little divergence of opinion; and so the commission voted to conduct an elaborate inquiry with reference to establishing the value or otherwise of the method.

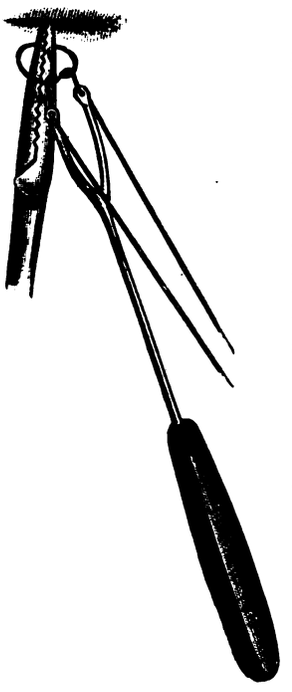
THE INFERIORITY OF THE LEFT SIDE OF THE BODY.—Dr. Henry Duchenne has drawn up a list of the disorders which especially affect the left half of the body, and concludes therefrom that it possesses a biological inferiority to the right. He says obliterating arteritis affects the left Sylvian artery oftener. Tubercle affects the left lung oftener; calculous nephritis and renal cysts the left kidney; ovaritis the left kidney; orchitis the left testicle; varicocele the left spermatic veins; neuralgia; chorea, hysterical anæsthesia, the left side; cancer of the breast the left mamma.

New Instruments.

A NEW KNOT-TIER.

BY CHARLES D. SCUDDER, M.D.,
NEW YORK.

THE accompanying cut represents an instrument devised by me to help in making knots, when suturing or ligaturing, in cavities.



The instrument consists of a two-pronged steel shaft with a baked-rubber handle. Each prong has an eye near its end, and the distance between the eyes is three-eighths of an inch. The form of the prongs has been changed since the drawing was made, and the fork is now lyre-shaped. It can be made curved to any degree desired. The holes are carefully bevelled, and three sizes—nine-inch, six-inch, and four-inch length—are made by Tiemann & Co.

In ligaturing, the first knot is carried over the hæmostatic forceps, and the ends of the ligature (which should be of good length) are passed through the holes in the fork, as shown in the sketch. The knot is carried down and placed by the knot-tier wherever wished, and suitable traction is made by pulling on the ends of the ligature, which are wrapped around the fingers of either hand, while steadying the handle with the thumbs. The instrument is then removed carefully, in order not to undo the knot; a new hitch, single or double, is made, the ends again threaded through the eyes, the knot placed, and firm traction completes the operation.

In suturing, the needle is detached after the suture is passed through the tissues to be sewn together, and the knot is made and placed as above described.

A little practice will enable the operator to apply knots quickly and surely.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 3 to March 9, 1889.

WEBSTER, WARREN, Major and Surgeon. Retired from active service February 28, 1889. Par. 9, S. O. 50, A. G. O., March 1, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending March 9, 1889.

MARSTILLER, E. H., Passed Assistant Surgeon. Detached from Monitors at Richmond, and to wait orders.

CABELL, A. G., Passed Assistant Surgeon. Detached from the Naval Hospital, Chelsea, Mass., and ordered to Monitors at Richmond.

MCCLURG, WALTER A., Passed Assistant Surgeon. Promoted to rank of Surgeon.

BABIN, H. J., Surgeon. Detached from the Mohican, to proceed home, and await orders.

BRADLEY, G. P., Surgeon. Ordered to the Mohican.

LUNG, GEORGE A., Assistant Surgeon. Detached from the Vermont, and ordered to the Mohican.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending March 9, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	6	2
Scarlet fever	366	51
Cerebro-spinal meningitis	5	2
Measles	258	21
Diphtheria	207	53
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

THE DIAGNOSIS AND MEDICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.—Of the many conditions formerly treated exclusively by the physician, but recently brought within the province of the surgeon, intestinal obstruction in its various forms is one of the most important, and although Dr. R. H. Fitz (*Boston Medical and Surgical Journal, and American Journal of the Medical Sciences*) limits himself chiefly to the consideration of the medical treatment, his conclusions are, on that account, no less interesting to the surgeon. After analyzing the symptoms of strangulation, intussusception, twist, gall-stone, strictures, tumor, etc., he concludes that the symptoms, apart from the stoppage of the bowels, upon the presence of which the physician must rely to establish a diagnosis of acute intestinal obstruction, are abdominal pain, nausea, or vomiting, abdominal tympany, and abdominal tumor. The presence of fever, the occurrence of hiccough or jaundice, abnormal conditions of the urine, are all occasional and subordinate. The cardinal symptoms are pain, vomiting, tympany, and tumor. The vomit may become fæcal, and the tumor may be simulated by visible intestinal coils. But the presence of these cardinal symptoms is evidence of other disease than acute, internal, mechanical obstruction of the bowels. They may result from external causes of obstruction, and the various herniæ are to be excluded. They may be the symptoms of a peritonitis in the absence of mechanical intestinal obstruction. The various causes of peritonitis are, therefore, to be excluded. It is important to remember that, in the presence of urgent symptoms of acute obstruction, the source is found in the lower abdomen in more than four-fifths of the cases. The physician should remember that in the light of exact knowledge nearly all cases of acute, mechanical, intestinal obstruction die, unless relieved by surgical interference; that curative medical treatment has proven of sure avail in only a limited number of cases of intussusception, possibly in a few of twist in the large intestine, and in certain cases of gall-stones in the small intestine; that his first duty, after relieving pain, is to determine the capacity of the large intestine; that this is best accomplished during the first two days following the initial pain, before tympany makes the task more difficult, and pathological changes cause it to be more dangerous; finally, that the means employed for this purpose represent the most efficient curative agent in his control. Notwithstanding that thirty-one per cent. of the cases recovered without any operative treatment, it does not follow that such a recovery is to be anticipated, especially if it is to be associated with the evacuation of a slough. In such cases, in addition to possible death from peritonitis, annular stenosis may occur, or strangulation from lymph-bands may occur. The medical treatment of intussusception consists essentially in the use of mechanical measures for the reduction of the displaced portion of the bowel. The beneficial effect of such measures is all the more possible since it is evident that spontaneous reduction may occur. The mechanical treatment consists of rectal injection or inflation, preferably the former, and replacement by a repositor. Almost indispensable advantage is to be derived from the associated use of anæsthesia. Massage of the tumor and inversion of the body are important adjuncts. In the medical treatment of obstruction from gall-stones, it is to be remembered that in the cases here collected a fatal result followed all surgical treatment after the first week, and that five cases recovered under medical treatment after this date. The condition of the patient alone must determine the nature and duration of the treatment. Opiates, cathartics, and electricity have all been used in cases ending with recovery. In the light of the published experience of the past eight years, the medical treatment of acute obstruction is limited to the use of injections during the first three days, under sufficient degrees of pressure within fixed limits, to determine the patency of the large intestine. If it proves impassable, the case is no longer medical, but surgical. If the large intestine is readily distended, and a diagnosis of gall-stones is admissible, and the condition of the patient is not urgent, opium is to be given; laxatives and electricity may be tried, but they are of doubtful expediency. If medical treatment is of no avail, and surgical treatment is refused, the efforts of the physician are restricted to the relief of pain and distress by narcotics, intestinal punctures, and gastric siphonage. In conclusion, acute intestinal obstruction is diagnosticated by exclusion. Its seat is fixed by injection. Its variety is determined by its seat, the age, antecedents, and symptoms of the patient. Its treatment is surgical, on or after the third day, if the symptoms are urgent and forced injections fail to relieve.

CAMPHORIC ACID—$C_4H_{14}(CO.OH)_2$—has been recommended as an anti-catarrhal, as a dermatic, and as an anti-diaphoretic. A paper recently read by Dr. M. Reschert before the Berlin Medical Society attributes to this acid, which hitherto had no therapeutic use, an eminently beneficial effect in both acute and chronic inflammatory affections of the mucous membranes of the entire respiratory tract. Likewise in various acute diseases of the skin. A topical application of a three to six per cent. solution of camphoric acid effects a contraction of the surface-tissue (dermis or mucous membrane) within as little as two minutes—thus immediately causing a sensation of relief and palliation of pain, which phenomena are combined with an essential reduction of the inflammatory symptoms—acute coryza has repeatedly yielded to the nasal douche charged with a solution of 1 in 500, or to a cotton-wool tampon with a two per cent. solution. The acid exhibits no caustic accessory effects; on the contrary, it actively promotes granulation (in laryngeal ulcerations, etc.); and solutions of but 0.9 of one per cent. act aseptically. It may be exhibited subcutaneously; or topically in a one-half to one to two per cent. solution; or as an inhalant in a one to two per cent. solution. The probabilities are, that this substance may prove beneficial also in other directions besides those named. Tuberculous processes, however, are not influenced by it. Dr. Furbringer reports its prompt efficacy—in at least fifty per cent. of the cases treated—in stopping the night-sweats of consumptives. He uses, for this purpose, either 1 gramme (15 grains) three to four times through the day; or 2 grammes in the evening. This is said by Dr. Furbringer to be the only specific action possessed by camphoric acid, which he terms "an agreeable, very slightly toxic, and very little irritant antiseptic." Camphoric acid is in thin, colorless, scale-like crystals; or in large, limpid, monoclinic crystals, of acid taste; melting-point, 178° C. (352.4° F.); little soluble in water—easily so in alcohol or ether. Fats and oils dissolve up to two per cent. of it.

ANTIPYRIN IN CHORDEE.—Dr. Dixon recommends antipyrin in doses of fifteen grains at bed-time as a very efficient preventive of chordee.

The Medical Record

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Original Articles.

THE ETIOLOGY OF CROUPOUS PNEUMONIA.[1]

BY GEORGE M. STERNBERG,

MAJOR AND SURGEON, UNITED STATES ARMY.

(Continued from page 285.)

PART II.

THE PRESENCE OF M. PASTEURI IN THE SALIVARY SECRETIONS OF HEALTHY INDIVIDUALS.

IN September, 1880, while engaged in investigations relating to the etiology of the malarial fevers, I injected a little of my own saliva beneath the skin of two rabbits, as a control experiment. To my surprise the animals died, and I found in their blood a multitude of oval micro-organisms, united for the most part in pairs, or in chains of three or four elements. These experiments are recorded in my paper entitled "Experimental Investigations relating to the Etiology of the Malarial Fevers," published in the Report of the National Board of Health for 1881, pp. 74 and 75.

In December of the same year Pasteur observed this micrococcus in the blood of rabbits which died (December 13th) as a result of an inoculation with the saliva of a child which died of hydrophobia in one of the hospitals of Paris.[2]

Following up my experiments made in New Orleans (in September, 1880), in Philadelphia (January, 1881), and in Baltimore (March, 1881), I obtained the following results:

"The saliva of four students, residents of Baltimore (in March) gave negative results; eleven rabbits injected with the saliva of six individuals in Philadelphia (in January) gave eight deaths and three negative results; but in the fatal cases a less degree of virulence was shown in six, by a more prolonged period between the date of injection and the date of death. This was three days in one, four days in four, and seven days in one."[3]

The fact that the micrococcus in question varies very much as to its pathogenic power, as a result of conditions relating to the medium in which it develops, etc., was insisted upon in the paper from which I have quoted, and has been fully established by later researches (Fränkel, Gamaléia).

I found that cultures which had been kept for one or two weeks no longer exhibited any virulence when injected beneath the skin of a rabbit. On the other hand, virulence was increased by passing through the rabbit. This is shown by the following quotation from the same paper:

"In the dog the vital resistance is competent to withstand the assaults of the micrococcus—injected subcutaneously—having the potency of those found in my saliva, and the result of such an injection is simply a circumscribed abscess. But the increased power (which is perhaps simply a more vigorous and rapid development) gained by cultivation in the body of the rabbit, enables these organisms to overcome the resistance of the dog, and a diffuse cellulitis results of a fatal character." This result was obtained in a single experiment in which one c.c. of serum from the subcutaneous cellular tissue of a rabbit recently dead was injected beneath the skin of a dog.

Again I say in the same paper: "Unfiltered serum from a recently dead rabbit has invariably proved fatal in smaller quantity and in less time than is required by the saliva in the first instance, showing an increase of virulence as the result of successive cultivation of the organism in the body of a susceptible animal."

Claxton,[1] in a series of experiments made in Philadelphia in 1882, injected the saliva of seven individuals into eighteen rabbits. Five of these died within five days, and nine at a later period.

In a paper published in the *Journal of the Royal Microscopical Society* (June, 1886), I say:

"My own earlier experiments showed that there is a difference in the pathogenic potency of the saliva of different individuals, and I have since learned that the saliva of the same individual may differ in this respect at different times. Thus, during the past three years injections of my own saliva have not infrequently failed to cause a fatal result, and in fatal cases death is apt to occur after a somewhat longer interval, seventy-two hours or more; whereas in my earlier experiments, the animals infallibly died within forty-eight hours."

Fränkel, whose first publication was made in 1885, discovered the presence of this micrococcus in his own salivary secretions in 1883, and has since made extended and important researches with reference to it.

The saliva of five healthy individuals and the sputa of patients suffering from other diseases than pneumonia, injected into eighteen rabbits, induced fatal "sputum septicæmia" in three only.

When he commenced his experiments his saliva was uniformly fatal to rabbits, but a year later it was without effect.

Wolf[2] injected the saliva of twelve healthy individuals, and of three patients with catarrhal bronchitis, into rabbits, and induced "sputum septicæmia" in three.

Netter[3] examined the saliva of one hundred and sixty-five healthy persons, by inoculation experiments in rabbits, and demonstrated the presence of M. Pasteuri in fifteen per cent. of the number.

Vignal,[4] in his recent elaborate paper upon the micro-organisms of the mouth, says:

"Last year I encountered this microbe continually in my mouth during a period of two months, then it disappeared, and I did not find it again until April of this year, and then only for fifteen days, when it again disappeared without appreciable cause."

Immunity.—With reference to the question of immunity from pneumonia when the specific agent of this disease is present in the salivary secretions; or the failure, in many cases, to extend from the invaded lobe to other portions of the same lung, Gamaléia offers the following explanation:

"In order to study better the mechanism of the immunity of the healthy lungs in presence of the streptococcus Pasteuri, we made the microscopic analysis of the sputa

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[1] Read at the meeting of the Medical Society of the State of New York, at Albany, N. Y., February 6, 1889.

[2] Comptes rendus. Ac. d. Sc., 1881, XCII, p. 159.

[3] National Board of Health Bulletin, Washington, ii. (1881), p. 781. Also in Studies from Biological Laboratory, Johns Hopkins University, Baltimore, ii. (1882), pp. 183-200.

[1] Virulence of Normal Human Saliva. The Medical Times, Philadelphia, June 17, 1882.

[2] Wiener med. Blätter, 1887, Nos. 10-14.

[3] Compt. rend. hebdom. d., séances de la Société de Biologie, 1887, November 4, No. 34.

[4] Archives de Physiologie norm. et path., 3me série, X., p. 292.

of an individual who, in the month of December, 1887, experienced an attack of fibrinous pneumonia under our observation, and who subsequently had a chronic bronchitis, and expectorated constantly a quantity of pneumonic microbes, virulent for rabbits.

"The sputa were of mucus and adhered to the vessel; under the microscope they presented almost a pure culture of the specific streptococci, some polynuclear globules, and the large cells called endothelial (Staubzellen), having a large, round nucleus and filled with granules. Attentive examination showed that the last-mentioned cells, which have quite the character of macrophages, contained enormous quantities of streptococcus Pasteuri in various stages of disintegration. One may find in the same cell typical diplococci mingled with contracted and angular forms that by comparison alone can be assimilated with the specific microbes. In this way one may be convinced that the débris contained in the macrophages is the remnant of pneumonic microbes. The polynuclear leucocytes also contained the streptococcus lanceolatus, but in much smaller quantity.

"These phenomena give us, it seems to me, the explanation sought of the immunity of the pulmonary tissues. The pathogenic microbes, even when they exist in a very great quantity in the bronchial mucus, and arrive in the pulmonary alveoli, are arrested there in their development by the macrophages (Staubzellen), which take them in and digest them. In this struggle the endothelial cells may also die and be iejected in the sputa" (loc. cit., p. 457).

This explanation, in accordance with the so-called "Metschnikoff theory," has been offered by the writer in an attempt to explain immunity from infectious diseases generally, at a date which I believe to be prior to the publication of Metschnikoff's first paper. And it was the observation of the presence of the same micrococcus in the leucocytes of inoculated rabbits that led me to this explanation. In support of my statement I quote from my published works as follows:

In a paper read at the meeting of the American Association for Advancement of Science in Cincinnati, August 18, 1881,[1] I say: "It has occurred to me that possibly the white corpuscles may have the office of picking up and digesting bacterial organisms when by any means they find their way into the blood. The propensity exhibited by the leucocytes for picking up inorganic granules is well known, and that they may be able not only to pick up but to assimilate, and so dispose of, the bacteria which come in their way, does not seem to me very improbable in view of the fact that amœbæ, which resemble them so closely, feed upon bacteria and similar organisms."

In a paper,[2] published in the *American Journal of the Medical Sciences* in 1881, after showing that Pasteur's "exhaustion theory" of immunity is untenable, I say:

"The view which I am endeavoring to elucidate is that, during a non-fatal attack of one of the specific diseases, the cellular elements implicated which do not succumb to the destructive influence of the poison, acquire a tolerance to this poison which is transmissible to their progeny, and which is the reason of the exemption which the individual enjoys from future attacks of the same disease."

In my chapter on "Bacteria in Infectious Diseases," in "Bacteria,"[3] published in the spring of 1884, but placed in the hands of the publishers in 1883 (preface dated August 15, 1883), I say:

"In the disease produced by inoculation with saliva, or with a culture-fluid containing the micrococcus under consideration, owing perhaps to the rapid development of the micrococcus, no such limiting wall of inflammatory exudation is established; and we find the subcutaneous connective tissue diffusely infiltrated with serum which swarms with the parasites.

"The failure to restrict the inroads of the parasite may not be due alone to its power of rapid multiplication. It is not improbable that some poison is produced, during its active growth, which lowers the vital resistance of the tissues and prevents the occurrence of adhesive inflammation. And it may be that the true explanation of the immunity afforded by a mild attack of an infectious germ disease, is to be found in an acquired tolerance to the action of a chemical poison produced by the microorganism, and consequent ability to bring the resources of nature to bear to restrict invasion by the parasite."

The theory of immunity, here clearly stated, has subsequently received strong support from the experiments of Salmon (1885) in this country, and of Roux[1] in Pasteur's laboratory.

But, does a single attack of acute lobar pneumonia afford any protection from subsequent attacks? This question may be divided into two: Is that portion of the lung invaded in a first attack, subject to a similar process at a subsequent date? Is the individual who has suffered an attack of fibrinous pneumonia, subject to a second attack? The second question—if we speak of pneumonia in a general way, not differentiating catarrhal pneumonia from acute fibrinous pneumonia—must be answered in the affirmative, for that second attacks of pneumonia may occur cannot be questioned.

As to acute lobar pneumonia, which we have learned to look upon as a specific infectious disease, I am not able to give a definite answer from my own experience, or from an examination of the literature at hand, and the question is here stated for the purpose of eliciting information.

Morphological and Physiological Characters.—Figures 1 and 2 are from camera lucida drawings, and represent the organism as it appears in the blood of an infected rabbit, or in active growth in a suitable culture medium, when stained with one of the aniline colors. Although when in active growth the elements are of an oval or lance-oval form, this micro-organism is nevertheless a micrococcus, or according to the classification of Zopf, a streptococcus; for it approaches the spherical form in old cultures, in which the development is tardy or has ceased altogether, and in surface cultures upon agar-agar is often seen in long chains, as in Fig. 3. In blood, and in recent cultures in a liquid medium, it is commonly seen in pairs or in chains of three or four oval elements. The appearance of a capsule seen in Fig. 4 is far from being constant, and is best seen in preparations made from the blood of an animal recently dead, or in the rusty sputum of pneumonia. In unstained preparations, this so-called "capsule" appears as an aureole or transparent envelope, which can only be seen with difficulty owing to the fact that its refractive index very nearly approaches that of the fluid in which it is immersed. In-

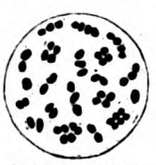

Fig. 1.—Micrococcus Pasteuri from blood of rabbit inoculated subcutaneously with normal human saliva (Dr. S.). Magnified 1,000 diameters.

Fig. 2.—M. Pasteuri from blood of rabbit inoculated subcutaneously with fresh pneumonic sputum from a patient in the seventh day of the disease. Same amplification as Fig. 1.

Fig. 3.—Surface culture of M. Pasteuri, showing development of long chains. Same amplification.

Fig. 4.—Surface culture of M. Pasteuri from blood of rabbit injected with pneumonic sputum, showing the so-called "capsule." Same amplification.

[1] A Contribution to the Study of the Bacterial Organisms commonly found upon Exposed Mucous Surfaces and in the Alimentary Canal of Healthy Individuals. Illustrated by photo-micrographs. Proceedings of the American Association for Advancement of Science, 1881, Salem, 1882, xxx., 83–94. Also in Studies from the Biological Laboratory, Johns Hopkins University, Baltimore, vol. ii., No. 2, 1882.

[2] What is the Explanation of the Protection from Subsequent Attacks, Resulting from an Attack of Certain Diseases, etc.? American Journal of the Medical Sciences, April, 1881, p. 376.

[3] William Wood & Co., New York, 1884.

[1] Sur l'Immunité contre le Charbon conférée par des Substances chimiques. Annales de l'Institut Pasteur, August, 1888 (vol. ii., No. 8).

my first paper, which is illustrated by photo-micrographs (1881), I say:

"When a culture-tube containing bouillon, made from the flesh of the rabbit, is inoculated with a minute quantity of blood taken from a rabbit recently dead, and containing the organism shown in Fig. 1" (a photo-micrograph showing it in rabbit's blood) "is placed in an incubating oven at a temperature of 37° C., there is a rapid multiplication of the micrococcus, which, it is proved experimentally, retains its virulent properties. While in process of active multiplication the organism also retains, at least to some extent, its characteristic form, as shown in Fig. 1, and presents the appearance of being surrounded by an aureole, as already described. But in a limited amount of the culture-fluid the process of multiplication by fission soon ceases.

"When the liquid is examined during the first few hours after inoculation, it is seen to be slightly opalescent, and upon microscopical examination is found to contain, distributed through it, an abundance of micrococci, solitary, in pairs, and in short chains. At a later period (forty-eight hours) the micrococcus will be found chiefly at the bottom of the fluid, in groups and zooglea masses, and without the transparent aureole which characterizes it, especially in the blood of the rabbit, during its active multiplication. If a culture-fluid in which the micrococcus has been present in abundance be examined at a later date (one or two weeks), the organism will no longer be found, at least in a recognizable form, and, so far as my experiments go, the culture-fluid no longer exhibits any virulence when injected beneath the skin of a rabbit."

FIG. 5.—Copied from illustration accompanying the paper of Dr. G. Salvioli in the *Archivo per le Scienze Mediche*. Turin, vol. viii., Tav. viii., Fig. 2. "Cells of the pleuritic exudation containing pneumonia-cocci, mounted in Canada balsam." Stained with gentian-violet.

M. Pasteuri is not motile, and does not, so far as known, multiply in any other way than by simple binary division. Its thermal death-point, as fixed by myself in 1881, is 140° F. (60° C.), the time of exposure being ten minutes. The facts that it does not grow at temperatures much below that of the human body, and that it requires for its development a neutral or slightly alkaline culture-medium, and is quickly destroyed in fluids undergoing putrefactive decomposition, indicate that it is a true parasite, in the human mouth or elsewhere, and that it is unable to maintain a saprophytic existence externally to the bodies of warm-blooded animals.

In my experiments on disinfectants in which this micrococcus served as the test-organism, made in Baltimore in 1881 (loc. cit.), and in San Francisco in 1883 (loc. cit.), I obtained the following results:

Mercuric chloride—One part in 20,000 destroys the vitality of the micrococcus in bouillon cultures, and one part in 40,000 arrests development. Iodine, dissolved by potassium iodide—1 : 1,000 destroys vitality; 1 : 4,000 arrests development. Sulphuric acid—1 : 800 destroys vitality; 1 : 1,600 arrests development. Carbolic acid—1 : 500 destroys vitality. Zinc chloride—1 : 100 destroys vitality. Alcohol—twenty-five per cent. required to destroy vitality. Salicylic acid—four per cent.; sodium hyposulphite, eight per cent.; ferric sulphate, sixteen per cent.; boracic acid, four per cent.; sodium biborate, four per cent.; and sodium salicylate, four per cent. were found not to destroy vitality. The time of exposure in these experiments was two hours.

In my experiments made in Baltimore (1881), in which the blood of a rabbit recently dead from an inoculation with material containing this micrococcus, was subjected to the action of the disinfecting agent for half an hour, and then injected into another rabbit, I found that certain chemical agents—sodium hyposulphite and alcohol—when mixed with the septic blood modified its virulence without destroying the vitality of the micro-organism; and that the inoculated animal recovered after such an inoculation, and was subsequently immune from the effects of the unattenuated virus. I believe that the experimental evidence here referred to is the first recorded with reference to the attenuation of virus by chemical reagents. This fact is recognized by the French author Vallin, in his "Traité des Désinfectants," published in Paris in 1882 (p. 222).

On the surface of agar jelly M. Pasteuri forms a slightly elevated, nearly transparent growth, and in "stick-cultures" in the same materia grows, to a limited extent, along the track of the needle, forming a nebulous line.

The results obtained by Fränkel with reference to the influence of various temperatures on the pathogenic power of this micrococcus, are as follows: In fluid media a temperature of 42° C., maintained for two days, suffices to neutralize the virulence of the culture. The same result is obtained at a temperature of 41° C., maintained for four or five days. Between 39.5° C. and 40.5° C., the virulence is no longer abolished, but is so far modified that inoculations no longer give rise, in the rabbit, exclusively to the typical condition of the blood and enlarged spleen of septicæmia, but simultaneously to an intense localization of the virus in the serous membranes of the heart and lungs.

Netter has shown that rabbits which recover after receiving an injection of saliva containing this micrococcus, are subsequently immune from the form of septicæmia to which it gives rise. According to this author the saliva of convalescents from pneumonia, during the first two or three weeks, is less virulent than that collected at a later date, and animals inoculated with it usually recover and are subsequently immune. Fränkel, also, found that the micrococcus, although still present in the sputa of convalescents from pneumonia, no longer presents the same degree of virulence, and that death may occur as late as the sixth day after the inoculation is made, instead of within twenty-four to forty-eight hours, as is the case when the rusty sputum of acute pneumonia is injected.

NAMES.—The writer first named this micro-organism Micrococcus Pasteuri, in a paper published in the *American Journal of the Medical Sciences*, in July, 1885. This name has generally been adopted in this country, and is used by recent English and French authors, but the German authors have not accepted it. Thus Flügge briefly describes it under the name "Bacillus septicus sputigenus (Fränkel)," thus ignoring all the work which had been done upon it prior to the time that Fränkel commenced his researches. Biondi,[1] following Flügge's classification, calls it "Bacillus salivarius septicus."

Fränkel speaks of it as the "Micrococcus of sputum septicæmia," or, as the "lancet-shaped pneumonia coccus."

Weichselbaum, and other German authors, frequently speak of it as "Fränkel's pneumonia coccus," or as the "diplococcus pneumoniæ." Gamaléia, recognizing it as a streptococcus, as the writer had done previously,[2] calls it "Streptococcus lanceolatus Pasteuri." I do not object to this modification of the name which I felt authorized to give to this much-named microbe in 1885, and which has all the rights of priority. But I do object to the designation "Fränkel's diplococcus," or "Fränkel's pneumonia coccus," which so many German writers have seen fit to apply to it. While I fully recognize the value of Fränkel's contributions to our knowledge with reference to its presence in pneumonic exudate, etc., I must insist that Talamon deserves the credit of having first produced

[1] Zeitschrift für Hygiene, Bd. 11, 1887, Heft. 2, p. 194.

[2] See my paper in the Journal of the Royal Microscopical Society June, 1886, p. 396.

typical lobar pneumonia in rabbits, by injecting this micrococcus through the thoracic walls. We have most positive evidence of this fact in the quotation already made from the work of Professor Germain Sée, published in Paris in 1885. If, therefore, it is anyone's pneumonia coccus, it is Talamon's. And in view of the fact that I discovered it in 1880, photographed it, and described its morphological characters in 1881, and made extended researches relating to its physiological characters, resistance to heat, to chemical agents, etc., in 1881 to 1883, I think I may properly object to its being called "Fränkel's diplococcus," or "Fränkel's micrococcus (or bacillus) of sputum septicæmia."

Having thus briefly reviewed the history of our knowledge with reference to this interesting micro-organism, and shown the nature of the evidence upon which it is claimed, by several competent bacteriologists, to be the infectious agent in acute pneumonia, I must leave the subject for your consideration and for further experimental investigation.

THE RADICAL CURE OF INGUINAL HERNIA.[1]

By CHARLES McBURNEY, M.D.,

SURGEON TO THE ROOSEVELT HOSPITAL, NEW YORK.

MR. PRESIDENT: When I reflect how much has been said and written during the last few years on the subject of the operative treatment of hernia; still more, as I realize the perfection to which many surgeons have, by different methods, brought this operative treatment, I may well hesitate to ask your attention to my limited experience in the same direction. Nevertheless, as we are all actuated by the same motive, that is, the desire to solve some difficult problems, I venture to offer my contribution as the result of no little thought and labor. In May, 1886, a patient came under my charge at St. Luke's Hospital, who had been operated upon some months before, by one of my colleagues, for the relief of a large scrotal hernia. He came to me on account of a protrusion through the abdominal wall, situated about one-half inch above the internal abdominal ring on the left side. This protrusion, or ventral hernia, was about the size of a half-egg, and evidently separated the fibres of the external oblique aponeurosis at that point. The base of the tumor was much larger than its apex, and its depth small, so that I hoped by simply reducing or pushing back the shallow pouch and firmly closing the opening in the abdominal wall to obtain a cure. I did not believe, however, that simply sewing together the parallel fibres of the aponeurosis and then closing the wound would cause them to remain attached with any firmness. I therefore completely cleared the edges of the opening in the abdominal wall down to the level of the peritoneum, brought the two walls of the wound moderately near together, and filled the interval with iodoform gauze, intending thereby to secure the formation of a dense cicatricial bond of union from the peritoneum outward, and so insure a firm union between the corresponding layers on the opposite sides of the wound. In this I was successful, for a dense strong cicatrix, perhaps one-fifth or one-sixth of an inch wide, was formed.

The patient got up from bed well, but in a very short time the hernia returned. I accounted for this relapse by the fact that I had not removed the redundant peritoneum. I had left a lax peritoneal pouch with some loose connective tissue outside it, thus providing the conditions necessary for the formation of a hernia. My conviction in regard to the cause of relapse in this case was confirmed by a similar experience in two other cases, in both of which indirect inguinal herniæ, the peritoneal sac was unintentionally reduced during the operation, and was not afterward found and removed. In both of these cases recurrence of hernia occurred shortly after convalescence. These cases still further strengthened my conviction, one which almost all surgeons hold, that the essential indispensable step in all operations for the radical cure of hernia is the complete removal of the sac, that is, the restoration to the peritoneal surface of the abdomen, at the point where the hernia begins, of the same smooth, tense condition, that exists at other parts of the inner lining of the abdominal walls. This proposition will, I think, be conceded by all who have had experience in the operative treatment of hernia. It is well known that in laparotomies where large drainage-tubes are used for a considerable period the subsequent appearance of ventral hernia is much more frequent than where no tube is used, as in clean ovariotomies. In the first class of cases no peritoneum covers the site of the drainage-tube, but a dimple is left on the inner aspect of the cicatrix which invites a protrusion of intestine or omentum, and which rapidly enlarges under pressure. In the second class, the clean ovariotomies, where the walls are neatly brought together and where no drainage is used, a smooth, tense peritoneal surface lines the cicatrix, and ventral hernia rarely follows. In the formation of inguinal hernia the first predisposing and inviting cause is the slight pouch or pocket formed by the peritoneum as it is reflected over the upper part of the spermatic cord in the male, and over the round ligament in the female, at the point where this cord enters the internal abdominal ring. The loose connective tissue which accompanies the cord, and fills the inguinal canal, forms no substantial backing to the peritoneum at this point, hence a protrusion which is at first a tiny pocket readily grows under the great and constant pressure from within to a fully developed inguinal hernia.

If these statements are correct, it follows, as a matter of course, that to cure hernia radically, one must radically remove the predisposing cause, namely, peritoneal laxity at the internal ring, and then must efficiently support the peritoneum at this point. Most surgeons agree as to the importance of these steps, the only difference of opinion being as to the means to be adopted.

Reasoning in this manner most surgeons have given up as totally unreliable all of the older methods, such as depended upon the inversion of pouches of skin into the inguinal canal, the use of subcutaneous sutures, and that last most unscientific method, the injection, into the connective tissue outside the sac, of irritating fluids. Many have been contented, and still are so, with removing that portion of the sac which lies below the external ring, deliberately leaving undisturbed that portion of the sac which lies in the canal between the external and the internal rings; or else have, as it is described ofter, "pulled the sac well down." Of course the upper part or neck of the sac is never removed by this method. These operators devote most attention to sewing up the external ring with various kinds of sutures, ignoring the fact that a hernia coming down into the canal is quite capable of breaking down any suture or cicatrix that may lie below it. The recognition of this radical defect in operating led to different methods devised to totally obliterate the sac. Macewen's method consists in first dissecting out the sac completely, then, by means of a suture passed lengthwise through the sac, this is thrown into a series of folds, the folded mass being, to use Macewen's words, "completely reduced from the canal into the abdomen, constituting a pad which is placed on the peritoneal surface opposite the internal ring. It there constitutes a boss or bulwark with its convexity presenting backward toward the abdomen, while its base rests on the abdominal walls surrounding the circumference of the internal ring."[1] This method, when practicable, undoubtedly obliterates the sac, but if it produces a "boss or bulwark" with an inner convexity, it, of course, tends to form an everted angle or pouch around the margin of this convexity. It does not reproduce the desired smooth, natural,

[1] Read before the New York Academy of Medicine, February 21, 1889.

[1] Annals of Surgery, vol. iv., p. 91.

peritoneal surface. Moreover, this method is often extremely difficult of application, or totally impracticable, as, for instance, in congenital herniæ; in cases where the sigmoid flexure or caput coli prolapses, and the uncovered wall of the intestine forms part of the sac wall; in cases where the sac is injured or so diseased that it is unfit to replace; and in cases, as in children, where the sac, being very small and thin, the whole mass of the folded sac is no larger than a pea. In selected cases this method has rendered remarkable results, due, I much believe, to the obliteration of the sac, and not to the formation of a boss or bulwark.

The same motive, that of totally obliterating the sac, led Mr. Charles Ball, of England, to devise the method of twisting the sac, the sac being seized high up in the canal with forceps, and twisted a number of times upon itself, the design being to twist the sac until its tubular character is entirely destroyed, and the peritoneum around the internal ring is thrown even into radiating folds. This somewhat blind method can hardly commend itself to a careful surgeon, for no provision is made against the involvement in the twist of a portion of perhaps already adherent intestine or omentum, and the sac may easily be twisted so much as to rupture it, or so little as to fail to obliterate it. Moreover, the application of this method presupposes a perfect, twistable sac, and is impracticable in the class of cases mentioned above as unsuitable for Macewen's plan.

It has seemed to me clear that to reach and operate upon the extreme upper part of the neck of the sac with certainty and safety the surgeon should expose it fairly, and I thought that I had devised the plan for doing so. I subsequently learned, however, that I had been anticipated in this, by many years, by Otto Riesel,[1] who, with the same design, advised and practised splitting the anterior wall of the canal quite to the internal ring. The advantage of doing this, in order to enable one to reach the highest part of the sac, and there openly deal with it, is self-evident. There are other advantages obtained by this plan which I shall refer to later. When the anterior wall of the canal is split up to, and a little beyond, the internal ring, one can make use of either of two methods of dealing with the neck of the sac. It may be either tied securely with a stout catgut or silk ligature, the sac being always opened to demonstrate that no portion of intestine or omentum is included in the ligature, or in the class of cases referred to as unsuitable for Macewen's or Ball's method, the sac may be—whether congenital or injured, or otherwise imperfect—cut away and the neck neatly and smoothly sewed. In this manner it is very easy to restore to the peritoneum at the internal abdominal ring, its natural, smooth, unbroken surface. My friend Dr. Abbe tells me that he has once had an opportunity to see the effect upon the peritoneal aspect of the internal ring which was produced by the application of a ligature as described.

A patient who had been operated upon in this manner died from other causes some time after operation, and at the autopsy the inner aspect of the internal ring showed a perfectly smooth surface, marked by a single central punctate cicatrix. In all cases where applicable, I much prefer the ligature, as being more rapid and perfect than the suture.

The sac having been dealt with by one method or another, various plans have been adopted in the treatment of the canal. Now this is undoubtedly the second most important step. The smooth internal peritoneal surface at the internal ring is of great value, but this should have some backing or support applied to it. Many are satisfied to supply that support at the external ring, entirely ignoring the canal.

This is done by sewing together the pillars of the external ring, a very imperfect method for several reasons. In the first place, there is still room for an incomplete hernia above the closed external ring, and if a bubonocele or incomplete hernia exists, and no truss is worn, no closure of the external ring can prevent the descent of the hernia through the ring. Moreover, the natural arrangement of the aponeurotic fibres forming the pillars of the ring is such that these diverge from one another. The ordinary tension of the abdominal wall tends to keep this ring open, doubtless to protect the cord from constriction, and therefore any sutures which draw the edges of this external ring together must inevitably give way, or, if they do not give way, must inevitably cut through the tense pillars. Is it not also entirely irrational to suppose that the extremely thin, nearly parallel, edges of this ring can be made to grow strongly together by simply suturing them? Certainly they will not do so in such a manner as to resist the constant pressure from above of a hernial wedge. What propriety is there in suturing the lower end of a canal, the upper portion of which still offers the conditions requisite for hernia? Other surgeons pass the finger up the canal and trust to a more active reparative formation following the breaking up of the connective tissue to close the canal firmly. Others, again, pass sutures from one side of the canal across to the other, endeavoring in this manner to narrow the inguinal canal. Macewen not only "freshens the canal by the finger and the handle of the scalpel," but afterward, by means of carefully adjusted subcutaneous sutures, endeavors "to carry the conjoint tendon outward toward the fixed, unyielding ligament of Poupart, and to unite it with the transversalis and internal oblique muscles." It is safe to say, I think, that no such union will ever take place when the operation is done as described. No really fresh or raw surfaces are brought together, and as the overlying tissues are afterward sewed and the whole wound covered with an antiseptic dressing, these sutures are purely subcutaneous ones and useless. One might as well subcutaneously sew together the edges of the pectoralis major and the latissimus dorsi in the axilla and expect them firmly to unite. If the lax and stretched conjoint tendon is to be utilized in this manner to restore the so-called "valve" action, then a portion of its *length* must be removed, and so its lower edge brought back to the natural position.

If these sutures were passed, as described by Macewen, and then the superficial wound left open to heal by granulation, there would be some certainty of obtaining union between the edges of the transversalis and oblique muscles and Poupart's ligament. Even if such union were obtained there would still remain a short space filled with loose connective tissue between the peritoneum opposite the internal ring above, and the edge of the conjoined tendon below. That is, the backing to the peritoneum at the point where hernia begins would be imperfect. The only certain method of obtaining complete closure of the whole inguinal canal, excepting that portion occupied by the cord, is, I am forced to believe, the open treatment of the wound. And even this method is not entirely simple. If the wound is merely left open, that is, unstitched, the œdema of the loose tissue in the canal, and the strong tendency of the deeper parts of the wound to come together, will suffice to prevent the formation of any but a shallow and superficial cicatrix. To insure the formation of dense cicatricial tissue throughout the whole length and depth of the canal the wound must be carefully packed with some dressing down to the very bottom, that is, down to the transversalis fascia in the lower, and to the peritoneum in the upper part of the canal. When this is done œdema of the loose tissue of the cord will not occur, and granulations will cover the bottom and sides of the wound throughout its whole length with absolute certainty. An objection to placing any reliance upon cicatricial tissue, which I have heard raised several times is this, that cicatricial tissue "melts away," that in time it "yields," that "of course" it cannot be as strong as clean primary union. Nevertheless, cicatricial tissue has done great harm and great good often, and that by reason of its strength. Deep cicatrices which involve the

[1] Deutsche Med. Wochenschrift, Berlin, 1877, pp. 449, 467.

whole thickness of the skin and which form by granulation are extremely powerful. How often do we see the deep cicatrices of burns and other traumatisms of depth melt away? The umbilicus is a cicatrix, and one formed under the unfavorable conditions of constant motion and absence of support, and yet, when well formed, it is capable of bearing a great many insults from within. I have also heard the argument used against cicatricial tissue

Fig. 1.

that it does not prevent a frequent occurrence of ventral hernia after laparotomies. The conditions, however, are very different after a laparotomy from those which exist after an operation for inguinal hernia. In a laparotomy all of the tissues of the abdominal wall are divided, including the transversalis fascia and the peritoneum. The union of the peritoneum and fascia must necessarily often be imperfect, and the intra-abdominal pressure is afterward brought to bear directly upon the cicatrix and upon any imperfection of surface.

After an operation for inguinal hernia the fascia transversalis lies uninjured behind part of the wound, and if the sac has been totally obliterated, a perfect peritoneal surface lies behind the whole of it. No invitation to direct pressure upon the cicatrix exists. It should be noted also that when, after any method of operating, a recurrence of the hernia occurs, this recurrence does not break down the whole posterior wall of the canal, but begins again at the internal ring, the very point where the original hernia began. This point, then, is the especial one—in fact, the only one—that particularly needs attention. I must refer to one method of treating the internal ring which is not infrequently mentioned as one of the steps in the operation. I refer to what is called "sewing-up" or "narrowing" the *internal* ring, with a view to preventing recurrence. When one remembers that the internal ring in inguinal hernia is a permanently dilated opening in the inelastic fascia transversalis, it is plain that stitches cannot

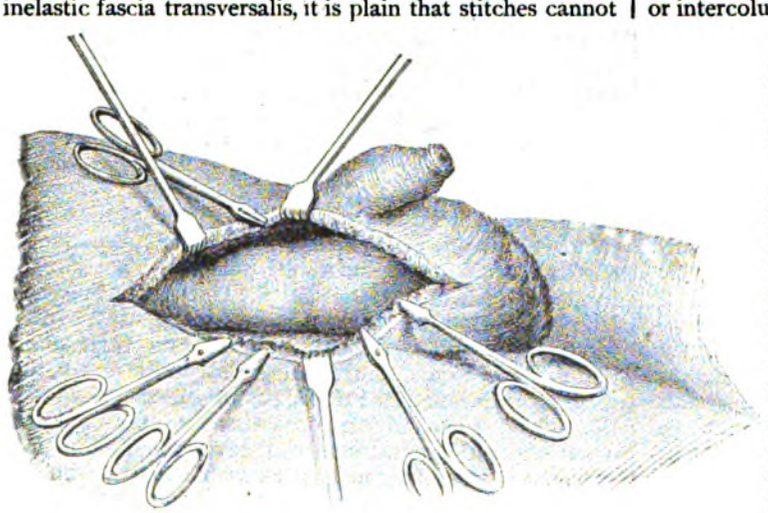

Fig. 2.

be applied to its edges so as to bring them together, for the edges of the ring are quite unyielding. The tubular prolongation of the fascia transversalis, from the edges of the ring down over the neck of the sac, might be tied off as the sac is, but the ring itself cannot be sewed up or narrowed by stitches. As a rule, there is a considerable quantity of loose areolar or fatty tissue at the extreme upper part of the neck of the sac, between the peritoneum and the fascia transversalis. It has seemed to me, therefore, safer to obtain granulation from the peritoneum itself outward than to first tie off the tubular prolongation of the fascia. I trust that I have not wearied you by allowing my remarks to take, so far, rather the line of argument than that of demonstration. This is, however, precisely the argument which I went through with in my own mind, and which led me to adopt the method of operating for radical cure in cases of inguinal hernia which I wish now to lay before you in detail. These illustrations will perhaps help to render the description more clear. The most careful antiseptic precautions having been adopted, especially in reference to cleansing the skin of the pubic, scrotal, and inguinal regions, a free incision is made, beginning a little *outside* the situation of the internal ring, and extending a sufficient distance downward over the sac. The incision is rapidly deepened over the whole length of the canal, so as to freely expose its anterior wall, that is, the aponeurosis of the external oblique muscle. The superficial layers over the sac are now cleared away (see Fig. 2) so as to

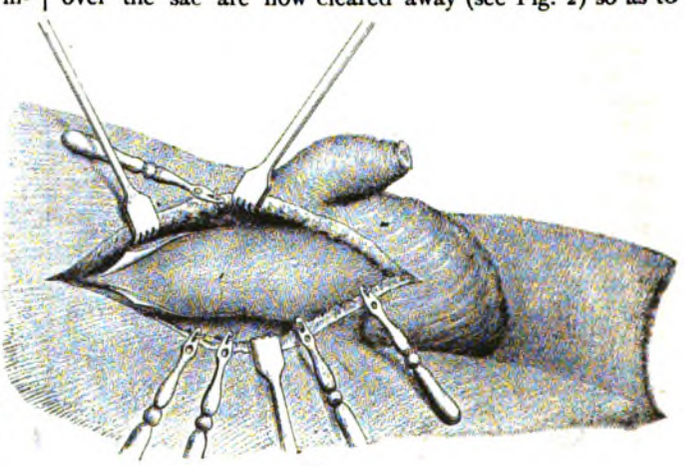

Fig. 3.

plainly show the whole anterior wall of the canal; the concave border of the external ring and its two pillars are completely exposed in their whole length. The sac is still covered below the external ring by the external spermatic or intercolumnar fascia. This fascia is now opened, and, one blade of a blunt scissors being pushed under the edge of the external ring, the anterior wall is split completely up to, and a trifle beyond, the outer border of the internal ring (see Fig. 3).

The deeper coverings of the sac are now dissected off, this dissection being often best and most rapidly accomplished with the fingers. If, now, the fascia transversalis is partially removed high up in the canal, it is quite easy to separate the spermatic cord from the sac, and this, too, often in congenital hernia. If begun below the external ring this separation is often extremely difficult. The cord being now separated from the sac up to a point a little within the abdomen, the whole sac is dissected out and lifted up (see Fig. 4.). In some cases, as in many congenital herniæ, this operation cannot be made, and then the sac must be cut away from the cord at each side of the latter. This illustration, like the others, is taken from the living subject, and serves to show that by this method the sac is completely exposed up to its very point of origin. At this stage, especially, the whole wound is thoroughly cleansed, and the hands of the oper-

ator and assistants washed. The sac is now invariably opened, and if intestinal contents are present these are reduced; if omentum is present it is very securely tied off with catgut, a large stump to prevent slipping of the ligature is left, and the rest cut away. The stump is pushed

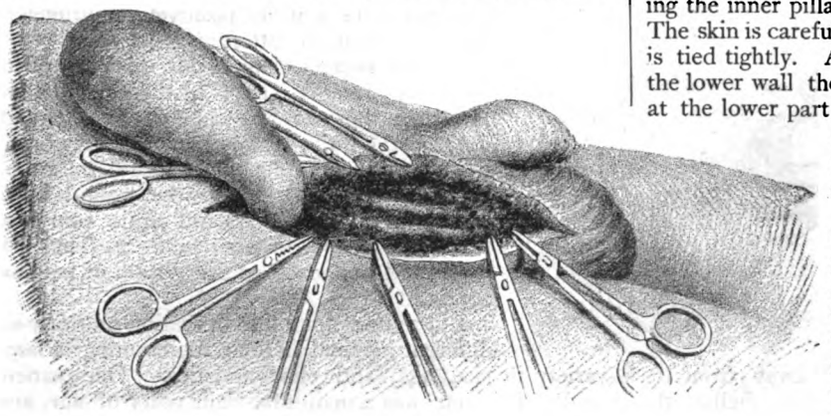

FIG. 4.

completely back into the cavity, adhesions being broken down or ligated if any are present.

The sac is now held up vertically from the internal ring (see Fig. 5), and the operator inserts one or two fingers through the neck and a little way into the peritoneal cavity. This is done to guard positively against the return of a piece of intestine or omentum into the sac during the application of the ligature. The first assistant then places the ligature of stout catgut or prepared silk about the neck at the very highest point, that is, on a level with the general peritoneum. The ligature is gently tightened on the operator's finger, and closed very tightly as the operator's finger is withdrawn. A pedicle, sufficient in size to prevent slipping of the ligature, is left, the rest of the sac being cut away. In congenital herniæ this step is a little more troublesome, as one must often resort to sewing the neck carefully and smoothly.

There now remains a long wound which includes the whole length of the canal, and even the entire circumference of the internal ring. The posterior wall of this wound is formed by fascia transversalis in its inner part, and by peritoneum in its outer part. The peritoneum on its inner surface is smooth, and the sac completely obliterated. The upper wall of the wound is formed by the edges of skin, superficial fascia, external oblique aponeurosis, and conjoined tendon; the lower wall by skin, superficial fascia, and a strip of aponeurosis, or, practically, Poupart's ligament, including the outer pillar. My aim being to insure the formation of granulation from the very bottom of the wound to the surface, it is not sufficient to simply pack the wound. The packing could easily become displaced, and the deeper layers rapidly but feebly unite. Moreover, it is desirable to bring down the stretched and lax edge of the conjoined tendon (see Fig. 6). These stitches of stout silk or catgut are therefore placed as follows: From four to eight, according to the size of the wound, bind together the tissues which form the upper wall of the wound, that is, the conjoined tendon, the aponeurosis of the external oblique (including the inner pillar of the external ring), and the skin. The skin is carefully and deeply inverted while each stitch is tied tightly. As many more sutures bind together at the lower wall the skin and Poupart's ligament, including at the lower part the outer pillar of the external ring (see Fig. 6). This suturing positively secures patency of the wound, and the formation of granulations from the bottom.

As thus arranged the wound would be unnecessarily wide, and now two or more heavy tension sutures are carried across the wound. These also relieve the tension on the edge stitches so that these latter do not cut their way out too soon (see Fig. 7). The application of the tension sutures is shown in this figure, the wound, when these are tied, being diminished to one-fifth or one-quarter of an inch in width. The tension sutures pass deeply through skin and superficial fascia, and are tied over pledgets of iodoform gauze to avoid ulceration. The wound is now carefully irrigated and dusted with iodoform throughout. Lastly, iodoform gauze is firmly packed through the entire length of the canal, particular care being necessary to see that, in packing at the outer angle, the whole circumference of the internal ring, including the stump of the sac, is covered by the packing. If this packing is not thoroughly done, the loose tissue in the canal becomes very œdematous in a few hours, and interferes with granulation formation.

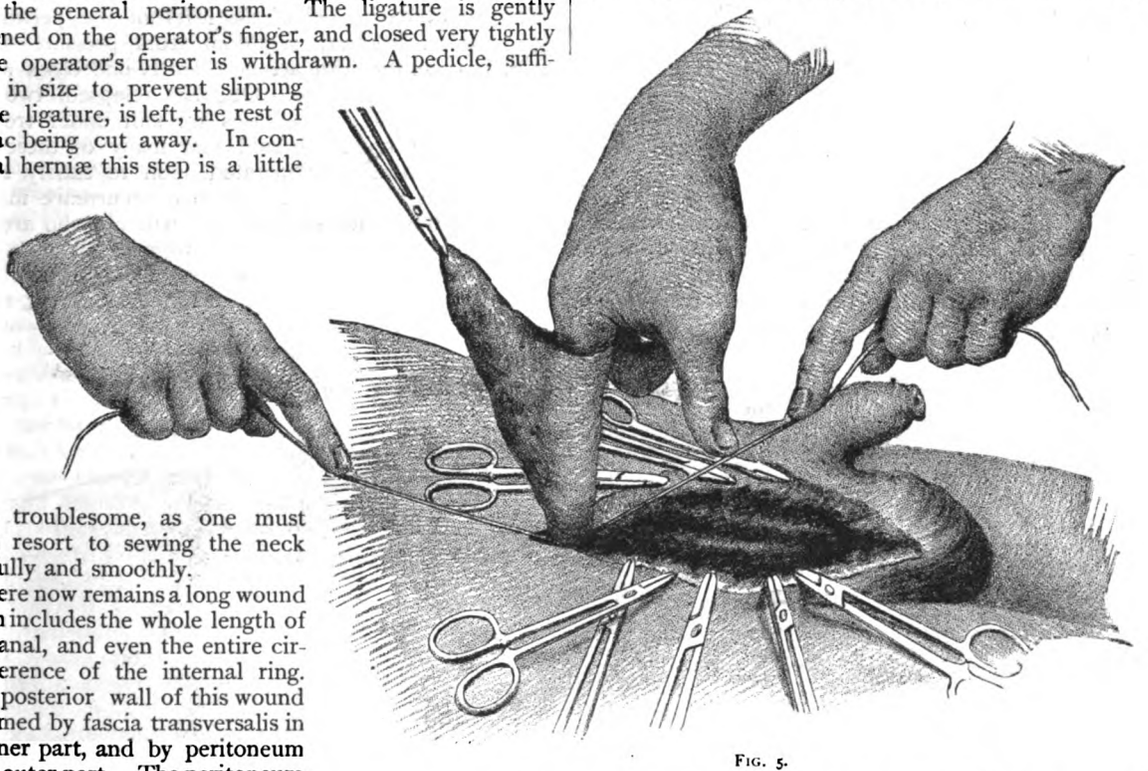

FIG. 5.

The scrotal or labial wound is sewed up simply without packing, a drain being inserted at the lower end if necessary. This dressing is now covered with abundant masses of bichloride gauze and cotton, and the whole very firmly bound in place with bandages (see Fig. 8). Just beneath the bandage and surrounding the penis is placed a large square of thin rubber tissue, so that accidental soiling of the wound with urine may not occur. I have most of these patients empty the bladder through the catheter for some days after operation, in order to avoid soiling of the

dressing and too much motion of the parts. In children I have thus far always succeeded in keeping the wounds aseptic by enclosing the whole dressing, including the thigh, in plaster-of-Paris. A child so dressed cannot turn in bed, and may be placed, by the aid of cushions, so that

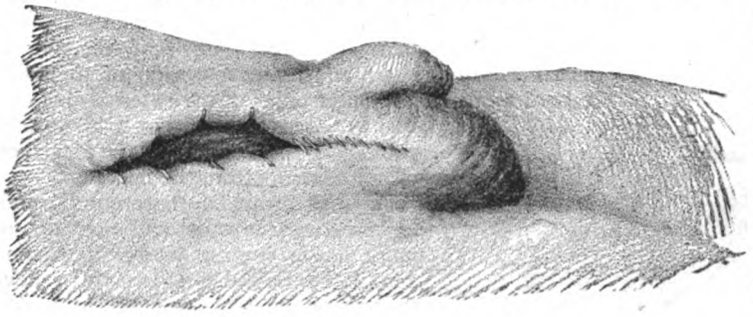

Fig. 6.

the stream of water is always directed away from the wound. In female children I thoroughly shellac the plaster as an additional precaution against urine. The dressing is not disturbed for five or six days, when, on removing it, the wound will be found to have begun to

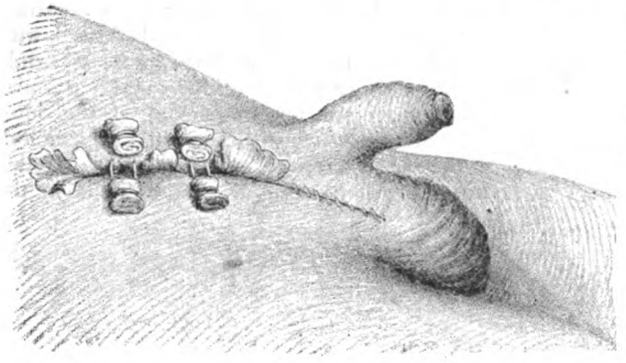

Fig. 7.

granulate. The packing is renewed in the same manner as at first placed, and changes are then made once in every four or six days. The time occupied in healing, so that a clean scar is formed, is usually from five to six weeks. The prone position for this length of time has seemed to me to be well spent; the scar becoming very strong (see Fig. 9). Certainly it is a small price to pay for the ability to get up from bed at the end of that time free from "the slavery of a truss," as one of my patients recently expressed it. None of my patients thus treated are allowed to wear a truss or support of any kind. If they were obliged to do that I should look upon the operation as very far from deserving the name of "radical cure." Moreover, I regard the constant pressure of a truss upon the scar as positively injurious to the strength of the latter.

The advantages claimed for this method of operating are: 1. That it is the only method in which the sac is completely obliterated. 2. That the walls of the canal are very firmly united, throughout its whole length, by strong cicatricial tissue. 3. That the wound being open the risk of abscess and septic complications is reduced to a minimum. 4. That it is rapid, and applicable to every form of inguinal hernia.

I have now done this operation on thirty-six different inguinal herniæ, representing a large variety in size, age, and characteristics. One patient died. This one was a man, fifty-eight years of age, and an old drinker. His wound did perfectly well, but ten days after operation he developed alcoholic delirium and died comatose eight days later. I should not have operated upon him until he had eliminated his alcohol more completely.

In three cases wounds became infected from diarrhœa, and were slow in healing, but in no case has any symptom suggesting general sepsis appeared.

In one case orchitis occurred and subsided readily.

In one case there was a relapse of hernia, easily accounted for by imperfection in operating, the cord not being separated from the sac sufficiently high up to allow the sac to be ligated at the level of the peritoneum. In no case has any symptom from pressure by the cicatrix upon the cord arisen. Thirty-one cases are reported upon up to date. One has relapsed, two cases cannot be traced; three cases are still under tretment. It may very properly be said that many of these cases have been too recently operated upon to satisfy anyone who requires the proof of time that recurrence may not occur. I think, however, that the patients who are here, and whom I shall ask you to inspect, illustrate satisfactorily that the principles involved in the operation are sound. I shall not occupy your time in reading to you the histories of the individual cases, but abstracts of these

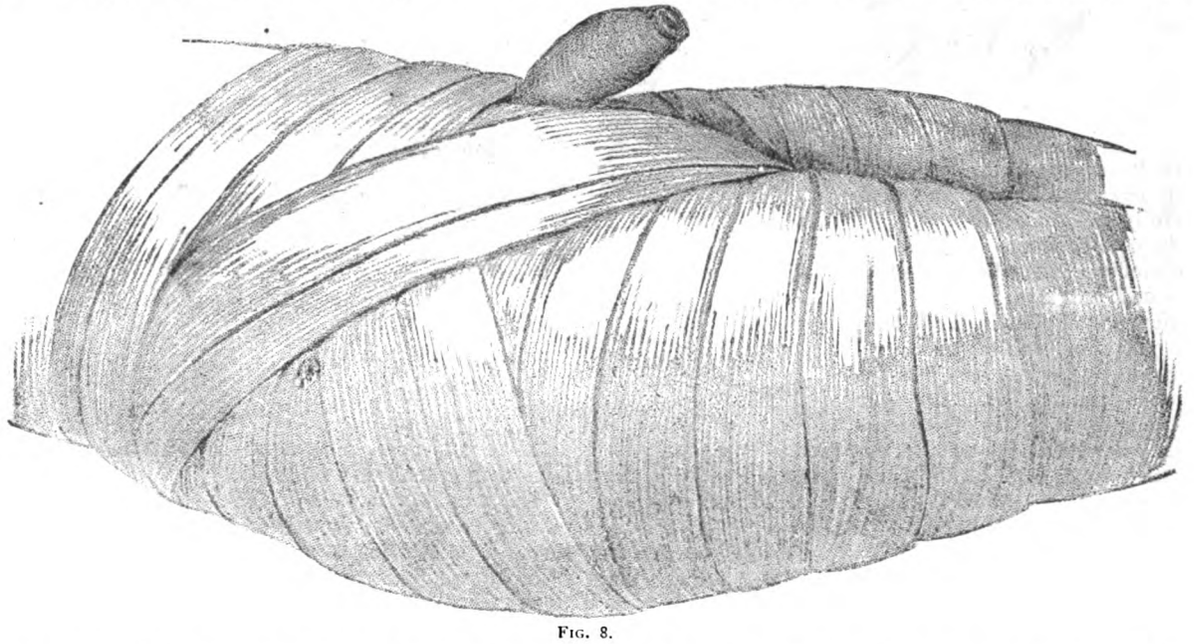

Fig. 8.

histories will be furnished with the printed report of this meeting.

Case I.—T. M——, aged fifty-eight, Ireland, in Roosevelt Hospital. Heavy drinker for twenty-five years

inguinal hernia, both sides; has worn a truss without success; operation, May 12, 1888; left side; does well; May 21, develops mild alcoholic delirium, and though no fever ever appears delirium continues, and patient died comatose on May 30th, eighteen days after operation.

Case II.—William S——, aged sixty-six; double inguinal hernia since 1853. In May, 1887, was operated upon at

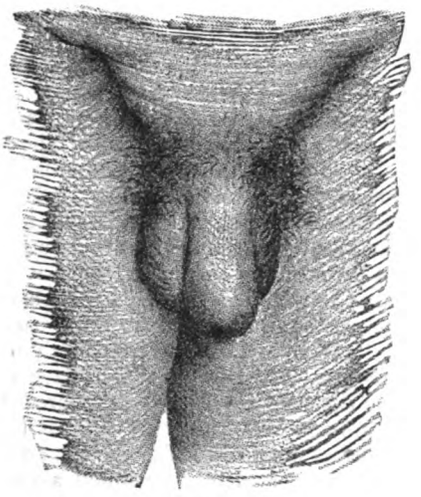

Fig. 9.

New York Hospital on both sides; at the end of two months both herniæ returned; left hernia large and cannot be held up by a truss; May 26, 1888, operation on left side; sigmoid flexure found to be prolapsed, and its uncovered wall to form part of wall of sac; July 4th, completely healed; not heard from since.

Case III.—I. B——, aged sixty-one, colored; large scrotal hernia on right side, reducible; operation, June 1, 1888; remained in bed seven weeks; very slight superficial granulation left; patient now presented; very strong cicatrix.

Case IV.—T. M——, aged forty-four; reducible double inguinal hernia, small; June 1, 1888, operation; soon had acute diarrhœa and right side become infected; slow in healing; six weeks in bed; seen recently; no recurrence.

Case V.—H. B——, aged sixteen; rapidly increasing right scrotal hernia of four months' standing; operation, July 20, 1888; discharged cured, August 28th; seen within one week; perfect.

Case VI.—H. W——, aged thirty; double scrotal hernia; one on right side of twenty years' standing, on left, eight months; double operation, July 27, 1888; August 31st, discharged cured; patient presented to-day perfectly sound. The last illustration was drawn from this patient.

Case VII.—F. F——, aged three; right inguinal reducible hernia of one and a half year's standing; operation, August 24th; plaster splint; sent home, September 6th; patient presented to-day perfectly sound.

Case VIII.—T. F——, aged twenty; right complete inguinal hernia and undescended testis; operation, August 17th; discharged cured, September 21st; seen this week; perfect.

Case IX.—T. K——, aged thirty-two; left scrotal hernia of fourteen years; steady drinker; operation, August, 10, 1888; large mass of omentum excised; hernia congenital; separation of cord from sac very difficult and not carried as high as usual; alcoholic delirium; wound became infected and behaved badly, gaping widely as sutures cut out; discharged cured, October 1st; now a small recurrence, precisely like a small incomplete inguinal hernia; hernia follows track of cord as before; not the slightest yielding of lower portion of cicatrix.

Case X.—T. L——, aged fifty-one; right inguinal hernia for twenty-nine years; left, for twenty years; operation, July 6, 1888, on right side; discharged cured, August 11th; patient presented to-day to Society; condition perfect.

Case XI.—T. L——; operation, October 20, 1888; left inguinal; discharged cured, November 26th; patient presented to Society to-day; condition perfect.

Case XII.—C. W——, aged twelve; right inguinal hernia; operation, October 27, 1888; contents, mass of omentum size of hen's egg; December 6th, complete healing; condition at this date perfect.

Case XIII.—G. H. T——, aged forty-seven; very large left inguinal hernia, much inflamed and irreducible; twenty years' standing; operation, November 10, 1888; contents fluid, and large mass of omentum; internal ring two inches in diameter; omentum ligatured and cut away; discharged cured, December 23d; patient presented to Society to-day; condition perfect.

Case XIV.—R. E——, aged thirty-seven; large left inguinal hernia of ten years' standing, irreducible; had had much discomfort and numerous attacks of strangulation; contents, omentum; operation, November 15, 1888; discharged cured, December 19th; condition now perfect.

Case XV.—A. O——, aged twenty-seven; double inguinal hernia, results of straining from chronic cystitis; right hernia existed eight years; left one, six years; double operation, November 24, 1888; January 20th, healed; at present date perfect.

Case XVI.—C. H——; right inguinal hernia, reducible; operation, December 15th; discharged cured, January 19, 1889; at present date perfect.

Case XVII.—A. G——, aged five years ten months; right inguinal labial hernia; operation, January 12, 1889; contents, omentum; tied and removed; double spica plaster-of-Paris; February 15th, completely healed.

Case XVIII.—B. W——, aged fifty-three; very large tubercular testis on right side; inguinal hernia with neck two inches in diameter above it; operation, November 10, 1888; testis removed and radical cure for hernia done at same time; January 10, 1889, patient discharged; hernia perfectly cured; sinus from tubercular cord remains; patient presented to Society to-day.

Case XIX.—H. T——, aged sixty-three; right scrotal hernia of twenty-five years' standing, also hydrocele same side; operation, November 30, 1888; Volkmann's operation for hydrocele, and hernia also operated upon; discharged cured, January 7, 1889; at date perfect.

Case XX.—F. M——, aged twenty-three; double inguinal hernia and retained testis on both sides; operation, July 28, 1889, right side; testis brought down to scrotum as far as possible and stitched; hernia operated for radical cure; August 31st, discharged; at date perfect.

Case XXI.—F. M——. Operation, December 22, 1888; left inguinal hernia and undescended testis; same operation as before; testis brought down and hernia operated on; discharged cured, January 16th; at date perfect.

Case XXII.—P. H——, aged forty-three; large right inguinal hernia, reducible; operation, December 1, 1887; wound healed, January 2, 1888; at present date perfect.

Case XXIII.—F. McG——, aged twenty-three; left inguinal scrotal hernia, reducible; operation, January 26, 1888; wound healed, March 2d; patient seen to-day; condition perfect.

Case XXIV.—O. L——, aged twenty-three; left inguinal omental hernia; operation, March 30, 1887; congenital sac full of adherent omentum; omentum tied off. May 18th, wound soundly healed; at present date perfect.

Case XXV.—S. K——, aged seventeen; inguinal hernia and retained testis; operation, May 8, 1887; radical cure; operation, and testis removed; soundly healed at six weeks; at present date perfect.

CASE XXVI.—M. P——, aged twenty-four; right inguinal hernia, five years' standing; operation, April 23, 1887; contents, adherent omentum; wound soundly healed, May 27th; at present date perfect; patient presented to Society to-day.

CASE XXVII.—F. J——, aged thirty-nine; small right omental hernia; operation, May 21, 1887; sound healing in seven weeks; at present date perfect.

CASE XXVIII.—H. T——, aged thirty-two; large left inguinal hernia, three years' standing; operation, February 7, 1887; sac congenital and empty; wound soundly healed, April 4th; patient seen about three months ago and condition found perfect.

CASE XXIX.—R. M——, female, aged sixteen; right inguinal hernia of nine years' standing; operation, December 28, 1886; wound completely healed, February 3, 1887; at present date perfect.

CASE XXX.—A. N——, female, aged twenty-eight; right inguinal hernia, irreducible, fourteen years' standing; operation, May 7, 1887; ovary found in right labium; wound healed on June 15th; just reported at present date perfect.

CASE XXXI.—J. G——, aged forty; left indirect inguinal hernia which filled the scrotum; hernia had existed twenty-five years; operation, October 21, 1887; wound healed in seven weeks; patient presented to Society to-day; condition perfect.

ON THE USE OF TOBACCO.

BY FRANCKE H. BOSWORTH, M.D.,

NEW YORK.

IN one of Columbus' earlier voyages of discovery his men, returning from the exploration of one of the smaller West India islands, reported that they had seen the natives holding firebrands in their mouths, the smoke of which was permitted to escape through the mouth, nose, and ears. A closer inspection discovered their mistake, and for the first time made Europeans acquainted with the pleasures and delights of the use of tobacco. Its adoption and introduction among the people at home followed, and but a few years elapsed before its use became common among all civilized nations. Like all new ideas, its introduction met with opposition, and its use was interdicted by law, and forbidden by papal anathemas and clerical exhortation. Royal edicts were promulgated against it, and numberless tracts published setting forth its dangers; James I., among others, publishing his well-known tract setting forth the evils of the use of the "pernicious weed." His teaching has been forgotten, but it is interesting to record that the name which he gave it survives to this day, only we call it the "fragrant" weed and not the "pernicious weed." Notwithstanding all this opposition the use of tobacco has increased and extended, until to-day it is probably used by every people on the face of the globe, constituting the one single universal article of commerce, in that it not only figures prominently in the commercial statistics of every civilized nation of the world, but is sold to, or cultivated by, all peoples, whether civilized or uncivilized. It is probably a well-authenticated fact that the aborigines of America were the one people on the face of the globe who had not discovered a method of preparing an intoxicating beverage, and who were not addicted to the use of alcohol. It is a somewhat curious fact, then, that the most notable gift which civilized Europe received from America was tobacco, while its most notable gift in exchange was alcohol. The commentary is scarcely necessary that it was not the civilized world that suffered by the bargain. The crusade against tobacco which was inaugurated upon its first introduction to civilization continues to the present day, and it becomes a matter of some interest to inquire, in all candor, how far the charges made against its use are to be accepted. Burton, who was by far the best read man, and one of the shrewdest of his day, writing three hundred years ago, in the "Anatomy of Melancholy," sums up in his quaint way as follows: "Tobacco—divine, rare, superexcellent tobacco, which goes far beyond all their panaceas, potable gold, and philosopher's stones. A sovereign remedy to all diseases. A good vomit, I confess, a virtuous herb if it be well qualified, opportunely taken, and medicinally used, but as it is commonly abused by most men, which take it as tinkers do ale, 'tis a plague, a mischief, a violent purger of goods, lands, health. Hellish, devilish, and damned tobacco, the ruin and overthrow of body and soul."

Making all allowances for his exaggerations and pessimistic habit of mind, is there not something of suggestion in this quotation, and are we not in some danger of falling into the routine habit of condemning the use of tobacco and ignoring the difference between its use and abuse? Carlyle, in his "Reminiscences," tells how he once rode sixty miles to Edinburgh "to consult a doctor, having at last reduced my complexities to a single question. Is this disease curable by medicine? or is it chronic, incurable except by regimen, if even so? This question I earnestly put; got response: 'It is all tobacco, sir, give up tobacco.' Gave it instantly and strictly up. Found, after long months, that I might as well have ridden sixty miles in the opposite direction and poured my sorrows into the long, hairy ear of the first jackass I came upon, as into this select medical man's, whose name I will not mention." Carlyle evidently consulted a more devoted disciple of Father Trask than of Æsculapius.

A few days ago I noticed, in one of our daily papers, a certain action taken by a prominent religious body in one of our Western States which was something as follows: "Whereas, the use of tobacco in any shape or form is a filthy, pernicious, and degrading habit, imperilling the health of the body and the welfare of the soul alike, leading to a laxity in living which is the sure road to intemperance and all vice," etc., etc.; "Therefore, it is resolved that this conference will not grant ordination or license to preach to any candidate who is a victim to this debasing habit." In the London *Lancet* of a few months ago I recall an opinion which it was almost refreshing to read, for the mere courage which enabled the writer to make so bold an assertion. I only remember now the general tend of the article, which was that, as far as the writer's observation served him, he failed to see that the use of tobacco either shortened life or impaired the health of the average man, but, on the contrary, it was an open question, bearing in mind its well-known action as a nerve-sedative, whether, on the whole, its use might not be beneficial in quieting the overwrought nervous system, soothing a brain overtaxed by the cares and anxieties attendant upon an active, busy life. It is mainly with reference to a few of the questions suggested by the above that the brief paper I have to offer to-night has been prepared.

The Anglo-Saxon races have been smoking and chewing now for nearly four hundred years. They contracted the habit from a race which, as far as history and tradition teach us, were remarkable for their vigor of body and mind as well, and, as far as we know, were an unusually long-lived people. In the time that we have been using the weed there is no evidence to show that the race has in any way deteriorated, but, on the contrary, it is abundantly shown that the average duration of life has increased nearly fifty per cent. There is no evidence to show that in this time the race has been more subject to disease, but rather that they are less so. There is no evidence to show that the race has lost anything in its intellectual activity, but, on the contrary, it has been a time of most marvellous fecundity in all that is great in literature. Let us look more especially at the specific action of tobacco. It is used in smoking, chewing, in snuff, and in dipping. As far as its specific action is concerned, we are only interested in the two methods of its use—in smoking and chewing. The usual analysis of tobacco now accepted is that of Posselt and Reinmann, which is as follows:

Analysis of the Leaf.

Nicotine	0.060
Volatile oil	0.010
Bitter extractive matter	2.870
Gum and malate of lime	1.740
Chlorophyl	0.267
Albumen and gluten	1.308
Malic acid	0.510
Salts of pot. cin. and ammonia	0.734
Silica	0.088
Water	88.280
	100.00

Leaving out from this analysis the volatile oil, extractive matter, albumen, gluten, and chlorophyl, and negative and inert matter, and we have left a substance containing 1 part of nicotine, 4 parts of salts of lime, ammonia, etc., with 88 parts of water in 100. It is interesting to note, in this connection, that the percentage of nicotine in various kinds of tobacco varies, and that Havana tobacco contains but two per cent. of this poisonous element while Virginia tobacco contains about seven per cent., according to some analyses. The moral of this is that we should always smoke the choicest brands of Havana cigars. In smoking, the ammonia salt may become the source of considerable discomfort in the burning and smarting tongue which results from excessive and continuous practice of the habit; of course, in chewing this action is not noticeable. We thus are reduced to the action of nicotine for the possible deleterious influence of the plant. This element, as before stated, is present in varying proportions in the tobacco-leaf; according to some writers, from one to seven per cent. It is a clear and colorless fluid, highly volatile, and of an extremely pungent, disagreeable odor and strong, burning taste. It is rapidly absorbed into the fluids of the body, and is one of the most deadly poisons known. It is rendered volatile by burning the leaf and is present in the smoke of the tobacco. It is generally accepted that the volatilized nicotine in the tobacco-smoke is more actively absorbed than is the case when the leaf is chewed, but in either case the nicotine absorption is the essential element in the production of all of the evils which can be charged to the habit. Nicotine acts on the heart, nervous system, stomach, and upper air-passages. The prominent symptoms which may be caused by nicotine, with reference to the heart, are intermission and palpitation; that is, it produces certain functional disturbances of the heart which, for the time, may be the source of more or less discomfort to the patient; but the important point is, does this condition ever lead to one of organic lesion? I find but one writer bold enough to say that this occurs, and he only hazards the opinion (Dr. Kennedy, of Dublin) that the functional disorder may in cases eventually lead to the development of fatty changes in the muscular structure of the heart. On the other hand, there is abundant evidence to show that this is an extremely rare event. Few of us but have met with what we call a smoker's heart, one characterized prominently by the intermittent beat with some little irregularity of action and with which there may be the clinical history of occasional attacks of moderate palpitation brought on by overexertion. We keep these cases under notice, it may be for years, and we rarely, if ever, discover, anything that we can call an unfavorable progress, the development of any new symptom or any evidence of weakness of the muscular structure of the heart. I confess that this is not easily to be explained. I am disposed to regard the term functional disorder as merely a cloak to conceal our ignorance of the real pathological condition, and believe that there is really a structural change of some kind which escapes our present methods of exploration, and, while such imperfection exists in our means of physical diagnosis, we must continue to use the term functional disease. Still, in the case in point, whatever be the cause or explanation, we have a purely functional derangement which may exist for months or years without the occurrence of any grave or serious complication to cause apprehension. The true explanation of the action of nicotine on the heart is probably to be found in its action on the general nervous system, and especially on the pneumogastric nerve. In acute nicotine-poisoning, death has been known to take place in thirty seconds. This can only be explained by its action on the nervous system. Of course, the prominent symptoms of acute poisoning are on the circulatory and respiratory movements. It arrests respiration or markedly interferes with it, and if sufficient of the drug has been given it arrests the heart's action, producing almost instant death. We may, of course, say this is due to its immediate action on the medulla, or to its action on the pneumogastric nerve. Certainly, there is abundant clinical evidence to show an especial affinity of the drug for this nerve, whether in cases of mild or severe poisoning, as in acute or chronic cases. We may, then, sum up its action on the nervous system in producing disturbance of vision, giddiness, muscular tremors with exhaustion, sleeplessness, and depression of spirits. In addition to these, the irregularity of the heart's action may be classed as a nerve-symptom, dependent on the impairment of control which the pneumogastric nerve exercises over it. Another organ prominently affected by the tobacco-habit is the stomach, giving raise to a gastric catarrah, with its usual train of symptoms, gastralgia, acidity, nausea, anorexia, etc., and which it is, of course, unnecessary to describe. The idea that this is due to the local irritant action of the nicotine or of the saline constituents of the tobacco is not to be entertained. For although, occasionally, we meet with a tobacco chewer who swallows the saliva impregnated with the tobacco-juice, he possesses happily a very rare and unusual organization who can do this with impunity. The nicotine action, then, on the stomach must also be explained by its paretic action on the pneumogastric nerve. In this case we have to do with a secreting organ whose healthy functional activity depends largely on the nerve-force supplied by this nerve. If now the nerve is under the influence of this powerful narcotic, the organ, when called upon for the performance of its normal digestive function, is found unequal to the task, and the ingesta act as a local irritant with the result of producing a local catarrh, and each subsequent demand upon it only serves to aggravate the existing condition.

Coming, now, to the upper air-passages, we find here a portion of the body which is not a glandular structure or a secreting organ *per se*, and hence one which is not liable to such impairment or perversion of function as may react in any way on the general system. It is merely a passage lined with mucous membrane through which the inspired air carries oxygen to the air-cells. Now the use of tobacco may affect this either by direct contact or it may affect it indirectly through the effect of the nicotine on the general system. Its action through the general system can be but limited, as its effect here would be simply in diminishing secretion. We must look, therefore, for its injurious effect upon the direct contact of the smoke with the mucous membrane. Now, in those in the habit of smoking, the fumes of the tobacco come in contact with the upper air-passages ordinarily in but a limited extent. In fact, of two persons in a room whose atmosphere is surcharged with tobacco-smoke, one smoking and the other not accustomed to the habit, it is the non-smoker who will suffer. Furthermore, if we examine the physical characters of tobacco-smoke more carefully, we find its analysis is as follows: Nicotianin, carbonate of ammonia, acetate of ammonia, empyreumatic oil, carbonaceous matter, moisture, and several juices.

Passing over these latter as merely the result of the destruction of the woody fibre, we have again the salts of ammonia and the nicotine comprising the essential elements of the tobacco-smoke. So that, whether smoked or chewed, we find the active elements of possible influence of the plant in the nicotine and the saline constituents. The saline elements need but a passing word.

They are in a high state of solution and their action is but feeble. Absorbed by the mucous membrane, their action is nothing. Their local action on the mucous membrane of the mouth and throat is merely as a feeble stimulant and irritant. If their action be long continued this irritation may become quite prominent. This we have all noticed who have been addicted to something more than moderate smoking.

It is a fair inference, I think, then, that the use of tobacco, in its influence on the respiratory tract, does not directly produce the morbid condition which it is usual to charge upon it by direct action, but that it is only through the indirect influence of the nicotine absorption through the general nervous system. Now, the evidences of chronic nicotine-poisoning are well known and easily recognized by the muscular tremor or unsteady hand, the dull headache, the retarded or irregular heart-action, the sleeplessness, and other symptoms; and unless we have some evidence, as shown by some of these symptoms in persons addicted to smoking or chewing, of this chronic poisoning, I do not think that we are justified in attributing the existence of a pharyngeal or nasal catarrh to the use of tobacco, although undoubtedly, in many cases, an existing catarrhal condition of the fauces may be aggravated by the use of tobacco, its action being possibly the slightly irritating effect of the volatilized saline constituents of the smoke and possibly the empyreumatic oils, but mainly, I take it, through the constitutional effect of the drug as acting upon the secretions through the nerves which regulate this function.

While, therefore, by no means advocating the use of tobacco, the point which I desire to make is: Are we not often liable to fall into a mistake in universally condemning its use without sufficient grounds, and is it not better when our advice, as physicians, is asked, in this respect, to base our answers entirely on the evidences of the effect of the drug upon each individual patient and, furthermore, to recognize the fact that this effect is shown by well-marked and easily recognized subjective symptoms? I have frequently, when asked this question, "Does smoking hurt me?" frankly said to my patients, "You know better than I do; no man uses tobacco to his harm without being fully conscious of it."

As regards its effect on the diseases of the upper air-passages, in a practice of twenty years largely devoted to treatment of these affections, I recall but exceedingly few cases wherein I have found it necessary to interdict the use of tobacco as injuriously affecting, in any way, these passages, or as interfering with the success of treatment.

The object of my paper, then, is not a plea for the use of tobacco, but simply to suggest whether we had not best abandon the idea that it is a drug whose use is pernicious in every way to body, mind, and morals, and rather to take the view that it is one of God's good gifts to man; a "virtuous herb, divine, rare, superexcellent tobacco" when properly used, but when taken "as tinkers do ale, 'tis hellish, devilish and damned tobacco."

THE FUNCTIONS OF THE AMNION.—Dr. Cane believes (*The Lancet*) that the chief primary function of the amnion is to support and assist in moulding the embryo by muscular contraction. Its next function is to secrete the liquor amnii. The first use of this fluid is to afford equal pressure and support on all sides to an embryo growing by blood-pressure, developed and modified by muscular action. The next essential use of the liqour amnii is to convey oxygen for the purpose of keeping the embryo alive until the time when the new being obtains another means of getting that oxygen for its system. Following these primary essential functions come all those enumerated in the various text-books. Fishes and amphibians have no need of an amnion and amniotic fluid, because the sea and the rivers and the lakes are their amniotic cavities and liquor.

TRAUMATIC ABSCESS OF THE LEFT ANTERIOR AND PARIETAL LOBES OF THE BRAIN, FROM A FRAGMENT OF AN EXPLODED ARMY-RIFLE METALLIC SHELL.

BY L. MERVIN MAUS, M.D.,

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THE following interesting case, occurring in my practice at Fort Lewis, Col., in 1883, possesses sufficient interest, in my opinion, to warrant publication, especially as the localization of brain injury and disease is attracting very considerable attention from the profession at the present day. Sergeant Alpheus Ryan, Company K, Twenty-second Infantry, aged twenty-six, native of Virginia, while engaged in reloading cartridges, about 6 P.M., June 9, 1883, was accidentally injured by the explosion of a brass rifle-shell, calibre 45, a fragment of which entered his face about one centimetre from the left corner of his mouth, causing unconsciousness and a copious hemorrhage from the external wound. The sergeant was taken immediately to the post hospital, where, upon examination, it was ascertained that the fragment had passed through the cheek, inflicting an injury to the superior coronary artery and appearing in the buccal cavity opposite the left upper second molar, from which it disappeared into the muscular tissue of the cheek. The external and internal wounds were so slight as to be scarcely noticeable; the hemorrhage, which was very profuse, was temporarily controlled by pressure of the facial artery, and finally by means of the persulphate of iron. The patient remained unconscious and in a collapsed condition, with stertorous breathing, during the entire night, face blanched and livid, pulse weak and thready, ranging from fifty to sixty per minute, notwithstanding repeated enemata of brandy and carbonate of ammonia. During the night and following day the patient remained partially unconscious and in a comatose condition, until June 11th, or about forty-eight hours after the accident. A careful examination was made in the buccal cavity, in order to determine the locality of the shell fragment, on the morning of the 10th, and from the marked depression of heart's action, together with the comatose condition of the patient, a conclusion was drawn that the fragment had by some means found its way into the brain. On the afternoon of the 11th the patient regained consciousness and was able to answer questions.

He was free from pain, temperature about normal, pulse sixty, and no disturbance of the motor or sensory nerve system. The mind became perfectly clear; could express himself well; no aphasia, and a gradual improvement in general condition except the heart's action, which persistently remained at sixty or less. On the 13th of June he was out of bed, feeling well, with good appetite, and was allowed to walk around the ward. From this date until the 23d improvement was gradual, and the patient was permitted to go to his company quarters occasionally, and to saunter around the garrison. The case was watched with much interest, as I felt quite satisfied that the trifling piece of shell had embedded itself somewhere in the cortex of the brain. There was nothing of especial interest at this time to note among the symptoms except the reduced number of heart-beats per minute, which continued at sixty. He complained of nothing, nor could I detect any sensory or motor disturbances. His treatment consisted of digitalis and ferruginous tonics, together with a generous diet.

June 23d.—Patient passed a comfortable night, felt unusually well at 7 A.M., and ate well at breakfast. At 10 A.M. he became nauseated and vomited several times. Nausea continued in afternoon, and one-drop doses of Fowler's solution given every half-hour; at 3 P.M., patient slightly delirious and feverish, vomiting and nausea continued; bromide of potassium and chloral hydrate were given at bedtime, and patient slept tolerably well during the latter part of the night. It is fair to suppose that the

delirium and fever which occurred during the night of the 23d inst., was the initial point of the cerebral abscess; the fragment of shell which had remained embedded until up to this time had probably been non-irritating.

June 24th.—Patient still delirious, occasionally vomiting; delirium mild in character; desired to go to duty. At 10 A.M. pulse was 60, and temperature 102° F.; iced wine was given during day. At 9 P.M. pulse was 83; temperature, 102.5° F.; paralysis of bladder occurred during the day.

June 25th.—Patient slept several hours during the night, under the influence of chloral and bromide of potassium; conditions about the same. At 10 A.M., pulse, 70; temperature, 102.5° F. The depression of the heart's action remained during the entire sickness as a prominent symptom.

The patient suffered no pain, and invariably replied, when asked how he felt, "Very well, sir." A disinclination to lift the head from the pillow was observed, and it was generally kept on the left side. Pulse, at 9 A.M., 81; temperature, 103° F.

June 26th.—No especial change noted; general apathetic condition existed. 7 A.M., pulse, 84; temperature, 103.8° F. 7 P.M., pulse, 91; temperature, 103.8° F. The body was sponged with diluted alcohol.

June 27th.—Patient passed a restless night; in the morning was in a semi stupor. At 7 A.M., pulse, 145; temperature, 104.5° F.; was placed in cold baths, during the day, every two hours, the ordinary bath-tub being used; water at 98° F. temperature, and reduced to 88°, patient remaining in bath ten minutes at time. At 7 P.M., pulse, 104; temperature, 101.4° F.

June 28th.—Patient's mental condition remained about the same. 7 A.M., pulse, 114; temperature, 102.6° F.; skin moist; tongue tolerably clean. Baths continued at intervals during the day; urine passes involuntarily; bowels moved by enema. At 7 P.M., pulse, 96; temperature, 100.8° F.

June 29th.—Patient slept well; feels better, and looks brighter. 7 A.M., pulse, 99; temperature, 100.4° F.; slight pain noticeable in back of neck. At 7 P.M., pulse, 98; temperature, 100° F. Baths were now discontinued.

June 30th.—Condition of patient about the same. Pulse, 7 A.M., 99; temperature, 101° F.; profuse perspiration at times. 7 P.M., pulse, 101; temperature, 102.6° F.

July 1st.—Patient very feeble, desires to sleep continually; pupils normal and sensitive to light. At 7 A.M., pulse, 94; temperature, 102.6° F. Several baths were given during the day, and the temperature was reduced to 100.2° F. in afternoon.

July 2d.—Patient looks brighter, answers questions well, slight pain still in back of neck, takes nourishment and medicines well. At 7 A.M., pulse, 78; temperature, 100° F

From this date on to death there was a gradual weakening of the vital powers, with scarcely any recognizable change in the motor or sensory centres. The patient felt more inclined to sleep, and apparently was continually dozing. When aroused he would take nourishment and medication. From July 2d to July 10th very little change in condition, when the temperature suddenly reached 95° F. on the morning of that date. At 7 P.M., same day, pulse, 63; temperature, 98.4° F.

July 11th.—Patient passed a fair night, but restless; slept, or appeared to sleep, most of the time; this morning is not inclined to answer questions or speak. Forehead cool, face slightly flushed, eyes somewhat glassy, nervous twitching about fingers when spoken to, seems conscious, but gradually fades into an apathetic condition. Patient remained about the same until the morning of July 15th, when he regained consciousness and was inclined to talk; said he felt all right and had no pain; pulse was up to 140 at 7 P.M.; temperature, 101° F.

July 16th.—Patient this morning dull and stupid and hard to arouse; inclined the head to the left side on the pillow; the skin was relaxed with copious perspiration; legs and feet dry and cool, almost cold. He took considerable stimulants during the day, and remained in a stupid condition during the 17th, 18th, and 19th, with little change.

July 19th.—Passed a quiet night; this morning was very weak, and breathing stertorous in character; perspiration was free, left side was cold and clammy (arm and leg), right side fairly warm; took quantities of brandy and meat-juice during the day, but was evidently unconscious.

July 20th.—Remained in a stupor all night, breathing labored and stertorous, perspiring freely; pulse very rapid, 164 per minute; temperature, 102° F.; left side still cold and clammy. Patient was now unable to take nourishment by mouth; enemata were ordered. During the afternoon it was noticeable that he was rapidly sinking; and at 4 P.M., very quietly, still unconscious, death occurred.

Autopsy, eighteen hours after death. Dura and sinuses normal, veins of pia congested, brain soft; a round yellowish opening was observed at the anterior surface of the left frontal lobe, from which pus exuded; also at the anterior margin of the left parietal lobe, just behind the fissure of Sylvius. An incision made connecting these two openings exposed a large abscess extending through the entire frontal lobe, and occupying nearly the entire lobe. In the centre of the abscess was found the fragment of shell, weighing about three decigrams, almost quadrilateral in shape, and measuring on each side a little more than one centimetre. Upon examination of the inner tablet of the calvarium a small slit was discovered in the great wing of the sphenoid bone, on the left side, about one and a half centimetre behind the sphenoid fissure. It may be interesting in a surgical way to trace the course of the fragment, which was as follows: After striking the second left upper molar, it was deflected and passed back into the cheek, and followed the temporal muscle into the zygomatic fossa; thence perforating the skull through the thin wing of the sphenoid, it entered the anterior margin of the left parietal lobe, passing through the fissure of Sylvius, barely escaping the middle cerebral artery, and buried itself midway in the left frontal lobes.

FORT PORTER, N. Y., February 28, 1889.

ANATOMICAL AND PHYSIOLOGICAL MEMORANDA.—In each respiration an adult inhales one pint of air. Man respires sixteen to twenty times a minute, or twenty thousand times a day; a child, twenty-five to thirty-five times a minute. While standing the adult respiration is twenty-two; while lying, thirteen. The superficial surface of the lungs, *i.e.*, of their alveolar spaces, is two hundred square yards. The amount of air inspired in twenty-four hours is ten thousand litres (about ten thousand quarts). The amount of oxygen absorbed in twenty four hours is five hundred litres (744 grammes); and the amount of carbonic-acid gas expired in the same time, four hundred litres (911.5 grammes). Two-thirds of the oxygen absorbed in twenty-four hours is absorbed during the night-hours from 6 P.M. to 6 A.M. Three-fifths of the total CO_2 is thrown off in the daytime. The pulmonary surface gives off one hundred and fifty grammes of water daily in the state of vapor. An adult must have at least three hundred and sixty litres of air an hour. The heart sends through the lungs eight hundred litres of blood hourly and twenty thousand litres, or five thousand gallons, daily. The duration of inspiration is $\frac{5}{12}$, of expiration, $\frac{7}{12}$, of the whole respiratory act. During sleep inspiration occupies $\frac{11}{12}$ of the respiratory period.

RUPTURE OF THE SMALL INTESTINE WITHOUT WOUND OF THE ABDOMINAL WALL.—Dr. C. André reports in the *Archives de Médecine et de Pharmacie Militaires* for December, 1888, a case of a cavalryman who was kicked in the abdomen by a horse. Examination of the abdomen showed no evidences of a contusion, but signs of peritonitis set in, and the man died the following day. Post-mortem examination showed a rupture of the small intestine with extravasation of fæces.

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THE MODERN PRACTICE OF SURGERY.

IT is pleasant occasionally to turn from the consideration of the question, Is medicine a failure? to contemplate the undoubted advances which have been, and are daily being, made in the science and art of surgery. It may be that we are no better able to cure any of the so-called self-limited diseases, at the present day, than our predecessors were one hundred years ago, or even, as some pretend, with a show of reason perhaps, that we are less skilled in the art of therapeutics than were our forefathers; but our enlarged surgical powers even the most pessimistic cannot deny.

We need not recapitulate the many evidences of progress made in abdominal surgery, in plastic operations, or in antisepsis—the foundation of most of the advances made, for there is never a medical congress where there is not at least one oration devoted to the setting forth of the proofs of such progress. It seems, indeed, as if the surgeon were only too glad to parade his triumphs before his brother working in the apparently less fruitful field of medicinal therapeutics.

In a paper read before the Massachusetts Medical Society (*Boston Medical and Surgical Journal*, January 17, 1889), Dr. Otis K. Newell refers to this subject and points out some lessons which he thinks may be derived from a contemplation of the present status of the surgical art. The writer's opinion of surgery is a high one, as witness the following: "The knowledge of proper and successful wound-treatment, under the operation of a principle [antisepsis] which until the past twenty years had never before entered the history of surgery, has been already so developed that a fatal result in no case of premeditated operation should ever occur. If it does, it must either be due to some unforeseeable complication or to poor surgical judgment." But this great step in advance is not without its increased measure of responsibility for the surgeon, and the author holds, as a corollary of the statement just quoted, that whoever shall undertake to do surgery to-day must be, except in emergency, held responsible for a completely aseptic course of wound-healing and at least a successful immediate result.

But in order that this uniform success may be attained, and that the surgeon may with justice be held to a strict accountability for its attainment, it becomes necessary to draw the line between the physician and the surgeon more sharply. In these days of rapid intercommunication, when a discovery in any part of the world becomes almost at once the common property of all, it is impossible for one to keep himself fully abreast with all advances in medicine; hence, in order to pursue his work in full justice to himself and his clients, or with profit to his profession, the practitioner must become a special worker. While seeking to avert the danger of becoming a "one-idea man," by laying a broad and solid foundation of general medical knowledge, the surgeon must, Dr. Newell holds, devote his whole time and energy to his own branch alone, and no man, he adds, is to-day justified in undertaking operative medicine "unless he has had, and is continually having, special surgical experience."

We fear it will take some time to educate the profession up to the point of demanding that a surgeon, in the country at least, shall keep to surgery alone, holding himself as a mere consultant, with no clientèle of his own, and yet the signs are not wanting that such a change is beginning to be effected.

LUNACY LEGISLATION IN NEW YORK.

THE present Legislature is more than usually occupied with the subject of our lunacy laws.

A resolution has been introduced into the Senate providing for the appointment of six commissioners to revise the lunacy laws of the State.

A bill has been introduced into the House to establish a State Lunacy Commission, to take the place of the present single roving Commissioner.

Senator Pierce has introduced a bill the general purpose of which is, according to accounts given, to discontinue the practice, which has prevailed in this State since 1864, of confining insane persons charged with crime at the Auburn State Asylum for Insane Criminals.

Dr. Carlos F. Macdonald has appeared against the bill, and the State Commissioner of Lunacy, Dr. S. W. Smith has appeared for it. The measure has been tabled. The bill providing that the dependent insane be placed in State rather than county institutions is still before the Legislature. The bill originates with the State Charities Aid Association, and has the almost unanimous support of the medical profession, and of all those who have made a special study of the care of the insane. It is opposed by the county politicians, a prominent spokesman being keeper of one of the County Poor-houses.

The bill provides that the State shall be divided into districts by a Board, to be constituted of the President of the State Board of Charities, the State Commissioner in Lunacy, and the State Comptroller. After this Board shall have established the insane districts they are to file with the Secretary of State the boundaries of the same, and the number of pauper insane people within each. In each of these districts suitable buildings and accommodations are required to be erected, either on new sites or on the site of some asylum already in existence. To these asylums indigent and pauper insane are required to be sent for maintenance, instead of being retained in county asylums.

Among the arguments for the new law are the fact that the present county system implies the necessity of building an asylum in each county, which would make sixty in all. Under the State district system there would be no

need for more than ten asylums. This number would afford ample provision for the insane for the next fifty years. Under the county system there can be no uniformity of management or treatment, while under the State system every improvement in the care and treatment of the insane could be availed of for use throughout the State, every improvement known to any one of the ten asylums being made equally applicable to all the other asylums.

If the bill fails to become a law it will be another unpleasant commentary on the degrading influence of politics in the management of our public institutions.

A SUBSTITUTE FOR ANTIPYRIN.

PHYSICIANS will all be glad that antipyrin has found a rival which promises to supplant it, in a large measure at least. This rival is phenacetin. In an article on the phenacetins, by Professor Dujardin-Beaumetz, in the *British Medical Journal*, the chemical, physiological, and therapeutical properties of these compounds are discussed, and the following conclusions are reached:

1. In the phenacetins we have excellent antihyperthermic and analgesic remedies.

2. Of the three phenacetins, two only possess therapeutic properties, para- and ortho-acet-phenetidin.

3. The ortho-acet-phenetidin must be given in larger doses than the para-acet-phenetidin. The medium dose of the latter is from 1.5 gramme to 2 grammes per day.

4. These two salts seem to be devoid of toxic properties.

5. They are powerful antithermics and very active analgesics, which ought to be substituted for antipyrin for the following reasons: *a*. Because they are non-toxic. *b*. Because they act in doses one-half smaller. *c*. Because they are one-half cheaper. *d*. Because, finally, there is no monopoly in their manufacture.

"Chemically," says Professor Beaumetz, "the phenacetins are derived from phenol, and to obtain them these phenols are submitted to five operations—first, the nitration of the phenol, the separation of the nitrophenols thus formed, their ethylation, the reduction of the bodies so produced; and, finally, their acetylation. The general formula of the phenacetins is

$$C_6H_4 \begin{cases} OC_2H_5 \\ NH\ C_2H_3O \end{cases}$$

The para-acet-phenetidin occurs as a white crystalline powder, liquefying at 134° C., barely soluble in water, very slightly soluble in chloroform, insoluble in glycerine, acidulated water, hydrochlorate of ammonia, oils, and liquid vaseline.

The ortho-acet-phenetidin presents itself in the form of brilliant white scales, without odor or taste, and fusing at 75°; it also is very slightly soluble in water, either cold or hot. Chloroform dissolves it in considerable proportions, and one gramme is taken up by three grammes of alcohol of 90° strength.

Regarding the therapeutic properties of phenacetin, Professor Beaumetz adds: "While it is quite as powerful as antipyrin and acetanilid, it does not cause the pain in the stomach, or the scarlatiniform rash of the former; nor does it give rise to the cyanosis of the latter. However prolonged may be its administration—and we have given it for months in doses of 1 to 2 grammes per day—we have never observed any bad effect. We have used it for the relief of every form of pain (neuralgias, migraine, rheumatic pains, muscular rheumatism, acute articular rheumatism, the lightning pains of tabes, etc.) and always with the best results. Further, in cases of hysteria, and of hysterical or neurotaxic pains, phenacetin has seemed to produce better effects than the bromides; it calms the excitability of the nervous system, and in some obstinate cases of nervous insomnia it procured sleep. Phenacetin seems therefore to be not only an analgesic but a hypnotic.

In this city the price of phenacetin is still quite high.

THE QUESTION OF CRANIOTOMY.

IN an address recently delivered before the Washington Obstetrical Society, Dr. Samuel C. Busey puts forward a number of reasons to sustain the view that craniotomy is no longer a justifiable procedure under any circumstances.

Dr. Busey estimates that 6,880 lives are annually destroyed in this country alone by craniotomy. In place of performing this operation, the modified Cæsarean section, with its present mortality to mothers of 72.52 per cent. (in America forty-five per cent.), and to children of 90.84 per cent., or the Porro operation, are recommended.

The maternal mortality in craniotomy is 2 or 3 out of 100; in Cæsarean section (Dresden clinic), 11 or 12 out of 100 for the mothers, and 13 out of 100 children. In craniotomy the obstetrician loses 10.28 lives; in section he loses 21.6 lives.

The issue, then, resolves itself, says Dr. Busey, into the actual or relative value of 5 or 6 women as against 87 infants. Dr. Busey votes for the infants.

His views upon this subject are, however, we venture to say, far too radical; there is some weakness in his logic, his data are by no means complete, and much of his argument is pure sentimentalism.

The exact mortality from Cæsarean section, when done by general practitioners and non-experts, is not known; but it will be long before we may expect that every country doctor can do it skilfully. Meantime, even in the hands of skilled surgeons in this country, the mortality to mothers is forty-five per cent.! Hence it is really, in America, a question of 55 mature lives as against those of 100 fœtuses.

The modified Cæsarean operation has been eagerly adopted by obstetricians, but even now only 135 cases have been reported; whereas it has its application, we are told, to the 6,000 cases annually in which craniotomy is now performed.

Again, it may easily happen that in future successful pregnancies the uterus may rupture, as has happened in the old Cæsarean operation.

The anti-craniotomists are, further, not agreed among themselves as to whether the Porro operation, or laparo-elytrotomy, may not be the better measure. Mr. Tait says: "The operation of amputation of the pregnant uterus, I venture to predict, will revolutionize the obstetric art, and in two years we shall hear no more of craniotomy or eviscerations; for this new method will save more lives than these proceedings do, and it is far easier of performance. It is the easiest operation in al-

dominal surgery, and every country practitioner ought to be able and always prepared to do it."

It may be a very easy thing to do a "Porro" in a well-equipped hospital; but most confinements occur under conditions not favorable to delicate surgical work. As for the operation itself, if the child extracted dies, the surgeon has made the mother barren, and cut off forever her chance of satisfying her maternal instinct or establishing a family.

We take it, however, that the most fallacious portion of Dr. Busey's argument is in his balancing 5 or 6 mothers against 87 fœtuses, or new-born infants. Of these 87, less than one-half will grow to maturity, and, when mature, five per cent. will belong to defective or dependent classes. This reduces the equation to 5 or 6 useful lives as against 40. But, according to American statistics, fifty-five per cent. of mothers die from Cæsarean section. Hence we have a question of 55 mature useful lives lost by section, as against the gain of 40 potential adults.

These figures give the other side of the case, and show that everything surgical has not quite the roseate look which the enthusiastic laparotomist now inclines to attach to it.

There can be no doubt that, in the present state of our science, craniotomy is at times not only justified, but an imperative duty. Perhaps the time may come when it can be dispensed with; and, at any rate, arguments like those of Dr. Busey will have the benefit of showing that craniotomy is not so often indicated as it used to be supposed.

COMPETITIVE EXAMINATIONS.

A FEW months ago quite a discussion arose over the appearance, in the *Nineteenth Century*, of a solemn protest against the methods of competitive examination imployed in modern schools and colleges. This protest was signed by four hundred and thirteen persons more or less eminent in politics, letters, and education. The note of condemnation thus sounded was quickly caught up by the daily press, and its sentiments were emphatically indorsed. It is the fashion just now to condemn our educational methods, and here was an opportunity not to be lost. The examination-system, we were told, caused cramming and the attendant mental and physical ills, destroyed the love of learning for its own sake, and produced a spasmodic and unhealthy effort in place of systematic and scholarly pursuit of knowledge.

The editor of *The Universal Review* has been at some pains to show the other side of this question. He finds that the signers of the protest were in many cases gentlemen not connected with education, and that the list contained very few persons actually engaged in practical pedagogic work.

Turning to this class, he found by inquiry that, among two hundred and eighty-two head-masters or principals of schools, two hundred and thirty-four favored the use of competitive examinations as essential adjuncts in education. The whole evidence among practical and successful educators was therefore in favor of this system.

The subject is of some interest to physicians, as is everything connected with education and training of the young. In medical education the tendency is now to increase the number of examinations, and the utility and necessity of them are, we believe, generally acknowledged. Perhaps the examination-method is not rightly applied in many cases. If so, it is because such examinations are made too infrequently, and are correspondingly more formidable. But there is no substitute yet put forward for examinations. They afford the chief test of merit, and are, if properly conducted, a fairly safe and sure test of progress.

THE ABORTIVE TREATMENT OF SPECIFIC FEVERS.

A LITTLE work has recently been written by Dr. C. R. Illingworth, of London, entitled "The Abortive Treatment of Specific Febrile Disorders by the Biniodide of Mercury." The contents of this brochure are hardly so pretentious as the title. Dr. Illingworth claims only that the drugs which he recommends are the most effective agents in treating the specific fevers. He does not waste time in laboring to prove any hypothesis, but contents himself with asserting that the disorders in question are caused by germs which, when acting virulently, make exhausting depredations upon the corpuscles of the blood. The treatment, therefore, indicated should be germicidal and hæmatinic.

The biniodide of mercury will answer every purpose as a germicide, while iron serves as a hæmatinic. Furthermore, since the abstraction of oxygen from the blood reduces also the amount of fibrin, making it more fluid, the use of ammonia, soda, and such medicaments as lessen the fibrin-forming power of the blood is contra-indicated.

While all the specific fibrin disorders, from whooping-cough to syphilis, may be treated by the biniodide, it is in scarlet fever, diphtheria, and measles that its action is here specially described.

The biniodide is given in the form of pills, powders and mixture.

The mixture for an adult is as follows:

℞. Sol. hydrarg. biniodid. (B. Ph.) .... ℥ j.
Potas. iodid. ..... ℥ ss.
Syr. et aq. menth. pip..... q.s. ad ℥ viij.
M. ℥ ss. q. 2, 3, or 4 h.

For a young child, from one-third to one-half of this quantity is given. The pills contain gr. $\frac{1}{16}$, gr. $\frac{1}{8}$, and gr. $\frac{1}{4}$, to be taken three times daily. For infants and young children the powders answer best, and they are made of the strength of gr. $\frac{1}{16}$, mixed with sugar, and taken three times daily.

In the treatment of mild cases of scarlet fever the patient is given gt. ss. to gt. j. of perchloride of iron, with gr. ij. of chlorate of potash, every two or three hours, and biniodide three times daily. When there is very great disturbance of the stomach, the acetate of ammonia, of salicylate of soda, may be added to the above for a time.

Local treatment is at the same time imperative. This consists in the application to the throat of a solution made as follows: Add ten minims of a 1 in 4 solution of potassic or sodic iodide to ℥ jss. of a 1 in 500 solution of the bichloride of mercury and sweeten to ℥ ij. with pure glycerine. This makes a red mixture, in which the biniodide forms a fine precipitate suspended in glycerine. In those cases in which the biniodide mixture is vomited, a combination of bismuth, carbolic, and hydrocyanic acids answers well, while the biniodide is given in powdered form.

In the malignant form of scarlet fever, Dr. Illingworth follows the usual practice. He increases the amount of iron in its astringent forms, adds alcoholic stimulants, and gives the biniodide as usual. He wisely advises against the use of antipyretics, such as antipyrin, antifebrin, or aconite.

The biniodide has also proved an efficient prophylactic.

The biniodide treatment of diphtheria is much the same as that for malignant scarlet fever. The same treatment is "signally efficacious" in whooping-cough.

The criticism which would be made of Dr. Illingworth's biniodide treatment is, that it is not a biniodide treatment at all, but might just as well be called the iron and potash treatment. How much of good effect comes from the germicide is a question very far from being settled by the evidence Dr. Illingworth gives us.

A FEW WORDS WITH OUR CORRESPONDENTS.

We have received recently several communications from our readers, upon various topics of a more or less personal nature, to which we will reply collectively, since it is impossible to answer each one by letter, and to state the reasons why the desired information cannot be furnished.

Some of these letters are from laymen, who give a detailed statement of their symptoms and ask for an opinion and advice. Others are a little more considerate, and furnish us with a ready-made diagnosis, asking only for a prescription suited to the individual case. Others, again, write requesting us to give them the name of the best oculist, or gynecologist, or genito-urinary surgeon, in the latter case usually taking the pains to state that the information is desired for a friend who has been unfortunate. Sometimes the correspondent says that he or she has been recommended to Dr. So-and-so, and asks for an opinion concerning that gentleman's professional attainments. It would appear unnecessary to say, were we not so constantly in receipt of communications of this sort, that The Medical Record is not designed to usurp the functions of the family physician, and it is to the latter that our correspondents must direct their inquiries.

But there is another class of correspondents, physicians, many of whose inquiries we would gladly answer did time and space permit, notwithstanding the fact that they are sometimes unreasonable in the demands that they make upon us. It is not unusual, for instance, to receive a letter from a physician who intends to read a paper before some medical society, in which he requests us to make out for him a complete bibliography upon the subject which he has chosen for his theme, or even to furnish abstracts of the most important articles. A little reflection ought to be sufficient to convince anyone that it would be out of the question to comply with such a request. It is furthermore unnecessary, since a letter addressed to the librarian of the Surgeon-General's office at Washington will bring the desired information upon payment of a very moderate fee.

Another subject upon which we are not infrequently asked to advise our readers is concerning the reliability of advertisers in The Medical Record, or as to the relative merits of two or more houses dealing in the same class of goods. Attentive readers of this journal cannot have failed to perceive that the advertising department is distinct from the editorial department. The publishers exercise all possible care to accept advertisements from responsible parties only, and our readers must be content with this. The editor cannot personally endorse advertisers, nor can he undertake to decide upon the relative standing of two rival houses. We hope that these few words will suffice to explain to our correspondents why it is that all their queries cannot be answered in the way they would wish.

THE PREVENTION OF PERINEAL LACERATIONS.

Since about thirty per cent. of child-bearing women have a lacerated perineum at some period in their lives, there is little wonder that this particular portion of the anatomy should receive a vast deal of attention. We regret to observe, however, that in these last years gynecological art has been much more devoted to the study of how to sew up the perineum than of how to prevent its laceration. It is not creditable to modern obstetrical art that so large a percentage of injuries occurs during parturition, that fifteen per cent. of women must be, and thirty per cent. are, torn. One might almost be tempted to think that if the perineum were not so much of a support to the obstetrician, he would support it in more effective style. This is perhaps an ungracious supposition, and it may be that, in fact, the modern perineum, like modern nerves and stomachs, is wearing out; and that perineasthenia is another mark of our pampered and overwrought civilization.

The directions given by obstetricians for preserving the perineum are sufficiently numerous, elaborate, and positive; but each one has his pet procedure, and the general practitioner is liable, after trying one or two, to drop into prophylactic nihilism.

This is not the case, however, with a physician of Lyons, France, Dr. Chassagny by name, who has devised an elaborate mechanical apparatus for the protection of the perineum (*L'Union Médicale*, 1888, p. 906). This consists essentially in a gutta-percha support, which is fastened to the thighs and applied so as to cover the perineum and inferior half of the vulva. By means of elastic lacings, a distention of the perineum in the transverse direction is permitted, but a downward stretching is impossible. The head is also thrown forward and made to glide under the pubis. How it works with the shoulders we are not told.

THE INTERNAL USE OF IODOL.

In an article in the *Berliner Klinische Wochenschrift*, 1889, No. 2, Dr. Dante Cervesato calls attention to the advantages of iodol in the treatment of those diseases in which iodine compounds are ordinarily used.

Dr. Cervesato employed the drug in a series of cases of scrofula, pulmonary troubles, and tertiary syphilis. He gave it in daily doses of from 0.50 to 1 and 1.50 gramme, never with any toxic effects. The results were uniformly good, and there were no digestive or renal disturbances. He, in some instances, applied an ointment of one part iodol to fifteen parts of vaseline upon enlarged glands.

In the treatment of phthisis, tubercular laryngitis, and chronic bronchitis the iodol was administered in the form of inhalations as well as by the mouth. For pur-

poses of inhalation the drug was suspended in a very fine emulsion.

No especial influence was observed upon the course of the phthisical processes in the lungs, but cases of tubercular laryngitis were decidedly improved.

In tertiary syphilis, also, all the effects usually obtained by the iodides were observed. The doses were one to three grammes daily.

Except in one or two cases Cervesato never observed any signs of iodism. Even acne occurred very rarely; the stomach functions were undisturbed, and appetite was even increased. No instance was noted of any effect upon the body temperature, circulation, or respiration. The urine was slightly increased in amount, as was also its percentage of urea. Iodine was present in the urine in small amounts.

The peculiarity of the drug is said to be that it is excreted from the body more slowly than are the iodides. Its tastelessness and general innocuousness make it preferable, as a rule, to the compounds of iodine at present in use.

In this connection we may refer to an article on "Hydriodic Acid," by Dr. William C. Wile (*Journal of the American Medical Association*). This writer speaks in high terms of hydriodic acid as a substitute of the iodides. He has used it successfully in chronic bronchitis, obesity, tertiary syphilis, chronic rheumatism, and in lead and mercurial poisoning.

News of the Week.

THE MICHIGAN MEDICAL COLLEGE held its Annual Commencement on February 28th. Degrees were conferred upon eleven graduates.

THE LONG ISLAND MEDICAL COLLEGE HOSPITAL held its graduating exercises on March 14th. Diplomas were bestowed on forty-seven students.

THE WORK OF SWISS SURGEONS IN PLASTIC SURGERY.—At a meeting of the Medicinische Gesellschaft, in Basle, Dr. Garré showed seven patients in whom skin-transplantation by Thiersch's method had been successfully performed. The method consists in covering the denuded area (after complete arrest of hemorrhage in surgical wounds, or after scraping off granulations in cases of ulcer, etc.) with the thinnest possible strips and slices of cuticle freshly removed from a living human body, preferably from the thigh or arm; and, having spread each graft evenly over the surface, the operator presses it down closely with a dry sponge, and then covers the whole area either with caoutchouc paper or protective salve, etc. The dressing is changed every two or three days. Almost invariably primary union follows, while the uppermost (dead) epithelial layer comes away in a few days. In one of Dr. Garré's patients, a woman, thirty-eight years of age, the whole of whose right arm was one granulating surface, the result of a burn, the entire area was skinned over in two sittings. Curiously enough, a few weeks after complete healing, intense itching was felt over the new integument; this, however, was speedily relieved by massage. Another patient, a boy fifteen years of age, in whom forcible extension of the contracted right elbow-joint had given rise to a deep rupture of the granulating surface down to the biceps, the denuded area measured 20 by 5 to 10 centimetres. Dr. Garré covered both the cutaneous surface and muscular wound with epidermoidal strips. The result was satisfactory in every way, the joint preserving perfect freedom of movement. In a third patient, a woman forty-one years of age, a third of the right leg was left denuded by a severe phlegmon. Some of the grafts measured from 10 to 14 centimetres in length, and from 4 to 6 in breadth. They were found to have united by first intention about the thirteenth day. In two other cases, where a plastic operation for union of the fingers was to be performed, Thiersch's grafting was resorted to in order to cover one of the two digital wounds, the other raw surface being covered with a cutaneous flap. In a sixth case, Dr. Garré transplanted several strips of cuticle to fill up the defect on the forehead left after a rhinoplastic operation. In the seventh case, a successful attempt was made by Dr. Huebscher to graft pieces of cuticle from a sucking pig two days old.—*British Medical Journal.*

QUEEN VICTORIA AND THE FORCEPS.—Dr. A. D. Macdonald, of Liverpool, writes to the *British Medical Journal*: "There is an historical fact which both 'Practitioners of the Old School' will do well to bear in mind, namely, that it is, in the providence of God, owing to the timidity of three doctors regarding the use of the forceps that Queen Victoria now occupies the British throne. If the forceps had been applied early in the labor of the Princess Charlotte, only child of George IV., and a living child and living mother had (as we have reason to expect) been the result, in all human probability the Princess Victoria would have remained the obscure daughter of Edward Duke of Kent. Our gracious Queen, and the British nation also, have, therefore, cause for blessing the author of the question-begging impotent fallacy, 'meddlesome midwifery is bad.' The phrase is almost fossilized already; in another generation it will be unheard of. I think the majority of modern practitioners agree in holding that 'dame Nature,' unaided, would nor infrequently play the part which she did in the Princess Charlotte's case."

THE BERLIN LARYNGOLOGICAL SOCIETY is the name of a new society recently organized in Berlin. Dr. Bernhardt Fraenkel was elected president.

THE RABBIT COMMISSION of Australia report that the experiments with the virus of chicken cholera, for the purpose of exterminating the rabbits has been a complete failure. The microbes lose their virulence too readily.

A BILL FOR ESTABLISHING A STATE BOARD OF HEALTH FOR NEBRASKA has been favorably reported, and is likely to become a law. The sum of $5,000 is appropriated to carry out the provisions of the act.

DEATH BY ELECTRICITY.—A bill has been introduced in the present session of the Alabama Legislature to put criminals to death by electricity instead of by hanging.

A CHAIR OF PHYSICAL EXAMINATION FOR LIFE INSURANCE has been created in the University of Vermont, and Dr. Charles F. Stillman, of New York, has been elected as its first incumbent.

DR. HENRY F. SEARS has offered to present the Harvard Medical School with a building for a pathological and bacteriological laboratory, not to cost over $30,000, and the donor to name the architect.

DEFEAT OF MEDICAL BILLS.—The Connecticut Legislative Committee has reported adversely upon the bill regulating medical practice. A similar bill in the Rhode Island Legislature was lately defeated by a small vote in a thin house, as was also a bill for the same purpose in Tennessee.

THE LANGENBECK MEMORIAL.—The German physicians of this country have so far contributed $2,053 to the Langenbeck Memorial.

ANTIFEBRIN has been used successfully in a case of tetanus by Dr. Flammarion.—*Bulletin Général de Thérapeutique.*

DR. GOWERS has resigned his position of Assistant Professor of Clinical Medicine at the University College, London.

PENNSYLVANIA IS THE ONLY STATE, so far as we know, which gives financial help to its private medical colleges. "From time to time," says the *American Lancet*, "the medical colleges of that State have secured money in smaller or larger amounts from the Legislature. Last year the Medico-chirurgical College succeeded in obtaining an appropriation. This year the Philadelphia Polyclinic seeks at the hands of the public purse the means for the erection of a building better suited to its needs. Some years ago Jefferson Medical College secured a couple of hundred thousand dollars for the erection of a hospital. How much the University of Pennsylvania and other medical schools have obtained from the same source we do not at this moment recall, but the amounts are very considerable."

NASAL SURGERY IN PARIS.—It seems that in France surgeons are more and more renouncing the great operations and resections which were once much in vogue there for the cure of naso-pharyngeal polypus. This operation used to cause very considerable mortality from secondary hemorrhages and cerebral complications, of which M. Verneuil has reported many examples. The course now pursued is rather that which M. Trélat has brought into repute at the Paris hospitals, namely, limited resection of the palatine arch, as described by Nélaton, followed by destruction of the polypus by electrolysis, or by the actual cautery, or chloride of zinc, the various prolongations of the polypus being thus attacked and the risk of relapse considerably diminished.—MR. ERNEST HART, *British Medical Journal.*

THE CRAZE FOR SPAYING WOMEN is fast dying out in New York. It is now conceded by the most aggressive gynecologists here that the operation has been fearfully abused. There can be no doubt that the operation is sometimes necessary, but the wholesale sacrifice of ovaries that was once so prevalent here, and from whence some of our Western gynecologists caught the infection, is a thing of the past. I have seen two cases here, but in each the ovaries were extensively diseased and the tubes distended with pus. They were a constant source of pain and sickness to the patients, who were incurably sterile, and the proper thing to do was to take them out. But they presented a striking contrast to the normal tubes and ovaries that I have seen exhibited, in times past, to the Marion Country Medical Society.—New York Correspondence of the *Indiana Medical Journal.*

THE KNIFE *vs.* ELECTRICITY.—Electricity and the knife are about waging war with each other. Dr. Robert Newman has consented to test the methods of electrolysis as against the urethrotome in strictures. We are told that Dr. E. S. McKee, of Cincinnati, who believes in the efficacy of Apostoli's methods of electrical treatment in gynecology, has accepted the challenge of a Pittsburg physician, Dr. Sutton, who believes in the knife.

THE MEDICAL PROFESSION OF A WESTERN CITY.—There are 92 persons practising medicine in Memphis—1 to 633 of the city's inhabitants. Eighty-one of these claim to be "regulars"—4 are homœopathic, 2 eclectic, 2 "practitioners," 1 thompsopathic, and 2 fail in attempting classifying themselves. Of these 1 graduated in the year 1839, 1 in 1841, 1 in 1848, 7 in the 1850 decade, 19 in that of 1860, 20 in that of 1870, and 25 between 1880 and 1889. Eleven never graduated.

INTERNAL URETHROTOMY, performed with Maisonneuve's instruments, is still the mode of treatment most used in strictures of the urethra which are rebellious to dilatation, but only under those circumstances. M. Guyon related to the Société de Chirurgie in 1886 the results of his practice in this respect. He had had 457 urethrotomies in twenty years, with 20 cases of death, of which 17 only were attributable to the operation. In these 17 cases the patients were all suffering from grave and old renal lesions. It is, however, considered that the harmlessness of the operation has greatly increased since the employment of antiseptic precautions. The sound is left in for twenty-four or thirty-six hours after the operation. —MR. ERNEST HART.

HYSTERIONICA BAYLAHNEN, a resinous plant indigenous to Chili, has been found to be an efficient drug in the treatment of diarrhœa and dysentery.—DR. G. BAILLE, *Bulletin Général de Thérapeutique.*

TETANUS IS AN INFECTIOUS DISEASE OF EQUINE ORIGIN.—Such is the doctrine of M. Vérneuil, advocated recently before the Académie de Médecine.

A THIRD CASE OF CURE OF AORTIC ANEURISM BY LIGATING THE RIGHT COMMON CAROTID AND SUBCLAVIAN ARTERIES.—At a meeting of the Southern Surgical and Gynecological Association Dr. F. T. Meriwether, of Asheville, N. C., reported a case of aneurism of the ascending aorta, involving the innominate artery, which was operated upon by him at the Mission Hospital at Asheville, N. C., on November 3d. The patient was thirty-seven years of age, female, no history of syphilis. The aneurism was primarily only in the ascending portion of the arch, but while under observation it began to involve the innominate. The right common carotid and subclavian arteries were tied with strong catgut. On the eighth day the dressing was removed and union had taken place. Not a drop of pus or exudate had discolored the gauze. No bad symptoms followed the ligation, and the bruit and pulsation decreased every day. She was discharged as cured on the twenty-first day. As well as could be determined the aneurism was three inches in diameter. This is the third case ofo peration upon aneurism of the ascending aorta, and the second cure, Wyeth, of New York, reporting one in 1880 as a cure, the patient dying one year afterward.—*North Carolina Medical Journal.*

PYROTOGENINE is the name of a toxic substance, the product of microbic life, which, according to MM. Roussy and Hayem, causes fever. Other less powerful substances, also isolated from microbic cultures, are called catorigenous poisons. Still other substances, which lower temperature, are called *frigorigènes*.

THE INTERNATIONAL CONGRESS OF DERMATOLOGY AND SYPHILOGRAPHY will be held in Paris, at the Hôpital St. Louis, August 5 to 10, 1889. Those intending to present communications should send word to Dr. H. Feulard, Hôpital St. Louis, Secretary of the Committee of Organization. The subjects of lichen, pityriasis, rubra, pemphigus, and the treatment of syphilis are among those to be discussed.

LIME-WATER IN DIABETES.—Dr. Theo. Clemens claims that the use of ʒ j. to ʒ ij. of lime-water daily will prevent the tendency to diabetic coma in the diabetic.—*Allgemeine Central-Zeitung*, No. 14, 1889.

THE ELECTRIC LIGHT (arc-light) contains chemical rays which, according to Maklakow irritates the conjunctiva and even the skin. Dr. Maklakow has produced an actual erythema of the skin simply from exposure to the light.

UTERINE "TONICS."—A correspondent writes to us with some indignation regarding the invasion of his office by agents bearing specimens of uterine "tonics." The composition of these preparations is usually as vague and vegetable as that of many widely advertised compounds, while the claims put forth for them are quite as extravagant. What a uterine "tonic" is, however, our correspondent does not know and would like to learn. Is it, he asks, antiphlogistic or antimicrobic, constrictive and ecbolic, or vaso-motor and hyperplastic? We quite agree that so vague a term as "uterine tonic" should be expunged from medical nomenclature.

THE FREQUENCY OF DISEASE OF THE UPPER AIR-PASSAGES.—Of 2,000 children examined by Dr. Franklin Chappell, of this city, 1,231 were found to be suffering from some anatomical abnormality of the upper air-passages; and in the majority of the cases there were symptoms of respiratory obstruction and catarrh.

THE NUMBER OF DRUGS in the German Pharmacopœia is only 606; in the Austrian, 560; in the Norwegian, 530. The United States Pharmacopœia contains 1,010; the English, 815; the Belgian and Spanish, about 1,500; while France leads the world with 2,000 drugs.

TUBAL DISEASE.—Professor Gusserow, of Berlin, reports thirty-one cases of removal of the Fallopian tubes for pyosalpinx. All the thirty patients recovered, with the sole exception of one, in whom a small piece of the diseased tube was left behind and fatal septic peritonitis ensued. Gonococci were sought for under the microscope, in some cases, but could not be found. The pus from diseased tubes produced no results when introduced into the peritoneal cavities of rabbits. Dr. Gusserow holds that the symptoms of pyosalpinx are those of chronic perimetritis, and that no special diagnostic feature can be distinguished. He takes the not very novel view that pyosalpinx is a serious malady, incapacitating women of the working classes, and exposing them to danger from rupture of the distended tube.

SUICIDE OF PROFESSOR SOYKA.—Professor Soyka, of Prague, shot himself through the head with a revolver in his house in Prague on the 23d ult. Professors Gussenbauer, Kahler, and Pick, who were called immediately, found Dr. Soyka still alive, but he died soon afterward. He had suffered from extreme nervous irritability since the death of his brother, a distinguished lawyer, who died in a lunatic asylum in Vienna last year. On the table of the room in which Professor Soyka committed the fatal act, a slip of paper was found on which he had written the following words: "Dear Brother, I follow you. Where thinking ceases, shooting begins. It is better to die than to go mad."

PICROTOXIN is a very effecient antidote to morphine poisoning, according to Professor Bokai. It stimulates the respiratory centre and can be given more freely than can atropine.

AN ELABORATE DISSECTION.—A notable preparation was recently finished by Dr. R. B. Weaver, of Philadelphia. It is a dissection of the entire cerebro-spinal nervous system displayed in one piece, all the nerves, both cranial and spinal, being traced to their termitral filaments. The brain alone, for obvious reasons, is not preserved, as this is a dry specimen. The dura mater, however, is retained entire, and, being filled with curled hair, its form is preserved and it constitutes a *point d'appui* for a display of the cranial nerves as nearly as possible in their relative positions, which is accomplished by means of fine wires bent in conformity to the course and direction of the several branches, and to which the nerves are attached. The eyes are also preserved, with the optic nerves, the coats being distended with a hard injection. The membranes of the cord are laid open, exposing the roots of the spinal nerves. The nerves are stripped of all extraneous tissue down to the sheath, and the whole dissection is so admirably mounted as to display almost at a glance the whole system in detail. Nearly five months of unremitting labor, from eight to ten hours a day, were expended in the dissecting and mounting of this specimen.—*New York Medical Times.*

A SCHOOL FOR CHILDREN WITH RINGWORM.—Mr. Ernest Hart writes from Paris to the *British Medical Journal* of a recent addition to the Hôpital St. Louis, viz., a school for children suffering from ringworm. The opportunities at disposal for treating such children in the wards and the hospital being insufficient—and, on the other hand, children suffering from ringworm being excluded from schools—the administration of the Assistance Publique of Paris has opened, in some buildings attached to the hospital, a school in which these children are at the same time medically cared for and taught. They come every morning and return home in the evening. This valuable service has been working for two years, and it has proved so useful that the question is now being entertained of establishing another similar school in another part of Paris; Dr. Quinquaud is in charge of it.

INSOLATION IN A YOUNG CHILD.—Dr. A. L. Hodgdon reports in the *Maryland Medical Journal* of December 15, 1888, a case of sunstroke occurring in a child four years of age. It was successfully treated by the cold bath and tincture of aconite.

Society Reports.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, January 23, 1889.

WILLIAM P. NORTHRUP, M.D., PRESIDENT, IN THE CHAIR.

DR. H. J. BOLDT presented some specimens of

CYSTIC OVARIES

illustrating the difficulty sometimes encountered in the diagnosis of ovarian tumors. The patient was thirty-nine years of age, and had been married twenty-one years. She had had two children, the last one having been born eighteen years ago, and one miscarriage five years ago. During the past six months she had been ailing, complaining of a pain in the right inguinal region, and losing flesh. She was cachectic-looking, her muscles were soft and flabby, and the abdomen was somewhat distended by ascites. On the left side there could be felt a tumor which seemed to be about the size of an infant's head, lying to the left of the median line and a little above the umbilicus. The tumor was smooth and movable. On the right side, in the hypogastrium, a number of nodular masses were to be felt which were continuous with other nodules extending into the right inguinal region. The uterus was displaced upward by a mass in the cul-de-sac. The tumor on the left side was taken to be a solid tumor of the ovary, and that on the right side to be a malignant growth. The patient was constipated, and when the bowels did move nothing was passed but scybalæ.

On making an incision through the abdominal wall a mass appeared at the opening which presented all the appearances of a papilloma. The incision was carried up in order to ascertain what was the nature of the tumor on the right side, and it was then found to be an ovarian cyst. The tumor on the left side was also seen to be of the same nature.

The history of this case showed, Dr. Boldt said, that one cannot be too careful in making a diagnosis in cases of abdominal tumor, for had he adhered to his first opinion that the case was one of cancer the patient would have been allowed to go unrelieved. The papillomatous growth which had appeared at the wound was found to be attached to the cyst of the right ovary. This was referred to the Committee on Microscopy for examination.

DR. ELIZABETH M. CUSHIER presented some specimens showing

FIBRO-SARCOMATA OF THE UTERUS AND LIVER,

removed post mortem from a woman, fifty-two years of age. The patient, a native of Ireland, had been married twenty-six years, and had had eleven children and two miscarriages, these last occurring in the same year, twelve years ago. Since that time she had not been pregnant. Her family history was negative. Menstruation had always been regular, profuse, from five to seven days in duration, painless, and recurring every three weeks. One year ago the patient had a severe uterine hemorrhage, after which the flow became excessive, and three months later ceased. The month following this the patient began to be troubled with nausea and vomiting, and since that time had been able to take only liquid food. Six months ago she first noticed a swelling of the abdomen, beginning in the epigastric region and extending downward and to the left. She had had very severe pain in the epigastric and hypochondriac regions, dating from about the same time. She was admitted to the Infirmary of the Woman's Medical College on December 26, 1888. She was at that time greatly emaciated, jaundiced, with dry and coated tongue, and greatly distended abdomen. On palpation in the epigastric region a large, hard mass could be felt extending downward half way to the umbilicus, and continuous with a mass in the left hypochondrium, which reached four inches below the ribs. There was dulness over this entire region, and dulness also in both flanks. The uterus could be felt as a firm uniform tumor reaching half-way to the umbilicus. The circumference of the abdomen at the umbilicus was 38¾ inches. Urine high colored and scanty, and contained ¼ albumen.

The condition of the patient did not materially change while she was under observation, excepting that there was a perceptible increase of the abdominal tumor. She took but little nourishment, and complained constantly of pain when not under the influence of morphine. The sensorium was unaffected, and the patient greatly desired an operation, hoping to gain relief, but it was decided that nothing could be done.

The woman's strength gradually failed, and she died on January 18, 1889. At the autopsy, made eight hours after death, many recent adhesions were found between the visceral and parietal peritoneum. The liver was enormously enlarged, and studded with soft, irregular, yellowish nodules, an aggregation of the latter at the lower portion of the left lobe forming a mass the size of a small fœtal head. The liver was adherent to the diaphragm, and to all surrounding viscera. The stomach, which was firmly adherent to the liver, had been so displaced that it occupied a vertical position to the left of the median line. The transverse colon and small intestines were adherent to each other, and to the lower and posterior surfaces of the liver. The spleen was adherent, otherwise normal. The kidneys were slightly enlarged and soft, capsule free, and presented no nodules. The heart was normal. The lungs were compressed by encroachment of the tumor, and congested posteriorly, otherwise normal. The uterus was the size of the gravid organ at four and a-half months. Its walls were uniformly enlarged excepting at one point on the right side where there were three soft nodules about the size of a hickory nut. The glands were nowhere involved. Upon section of the liver it was found studded with nodules, varying in size from a pin's-head to a hickory nut. The central portion of the left lobe was almost wholly converted into a soft nodular mass. Elsewhere the nodules were distinctly circumscribed, and limited by liver tissue, which was apparently unaffected by the neoplasm. The liver weighed sixteen pounds. The uterus, upon section, presented the firm, white fibrous structure characteristic of uterine fibromata. The nodules were, however, much softer than the surroundig structure. The mucosa was intact.

Microscopic examination of the nodules of both the liver and uterus gave the characteristic spindle-cells, with large, clear nuclei, of fibro-sarcoma. So completely were the tissue elements of both organs replaced by the cells of the neoplasms, that it would have been impossible to distinguish liver from uterine tissue in the sections under the microscope.

The points of interest were—first, the comparative rarity of sarcoma of the liver; second, the still greater rarity of the growth as a result of metastases from sarcoma of the uterus. In the literature on the subject, Dr. Cushier had not found any case in which the disease in the liver was secondary to a primary sarcoma of the uterus. That such cases do exist, and are reported, is more than probable, she said, but the difficulty in finding them points at least to their infrequency.

A question naturally arises as to whether certain cases which have been reported as primary sarcoma of the liver may not have had their origin in an obscure sarcomatous nodule of the uterus, that favorite site of fibroid neoplasms which are so closely allied to sarcoma.

DR. BOLDT said that these metastases in the liver from sarcomata of the uterus were certainly very rare. He had never seen such a case.

DR. H. A. C. ANDERSON presented a specimen, showing

CONGENITAL OCCLUSION OF THE DUODENUM,

removed from the body of an infant. The child was born at eight and a half months, and was, to all appearances, perfectly healthy. It was soon noticed, however, that it

could not swallow, and on the third day after birth it began to vomit a greenish-black fluid. The vomiting continued until the evening of the fourth day, when the child died. At the autopsy all the organs were found to be normal and well formed, except the duodenum. About one inch of this portion of the intestine, in close proximity to the pylorus, was absent, each end above and below the deficiency forming a perfect cul-de-sac. About one drachm of meconium was found in different parts of the small intestine, while about one ounce of it was in the stomach. The speaker was at a loss to explain the presence of the greater portion of the meconium in the stomach.

Dr. Holt asked whether the child's bowels had moved after birth.

The President inquired in what portion of the intestine the bile-duct opened.

Dr. Anderson said that the child's bowels had not moved. In the moment of surprise caused by the peculiar condition found, the position of the opening of the bile-duct had not been noted. He said that the occlusion was perfect, for the intestines had been injected, first with water and then with air, but there was no escape of either at the point of deficiency.

Dr. Freeman said he had made some search into the literature of this subject, but had found no case similar to this. In looking for an explanation of the presence of the greater part of the meconium in the stomach, we must first consider what meconium consists of. It is made up of what is swallowed by the fœtus, of the intestinal, and of the biliary secretions. There might have been a double bile-duct discharging both into the stomach and into the intestine. Or the bowels might have moved, and then the meconium have been swallowed.

Dr. Anderson said that there had been no motion of the bowels before birth, for the amniotic fluid was perfectly clear.

The President thought it most probable, as had been suggested by Dr. Freeman, that there were two bile-ducts, the larger one emptying into the cul-de-sac of the pylorus.

Dr. B. Farquhar Curtis gave a demonstration of Nothnagel's experiments in the

PRODUCTION OF INTUSSUSCEPTION

by an electrical stimulus applied directly to the intestinal walls.

The Society then went into executive session.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, February 21, 1889.

Alfred L. Loomis, M.D., President, in the Chair.

Dr. Charles McBurney read a paper (see page 312), entitled

THE RADICAL CURE OF INGUINAL HERNIA.

Dr. L. A. Stimson opened the discussion. He had come expecting to express his conviction of the value of the method which Dr. McBurney had described so clearly that anyone would be able to practise it. The necessity for restoring the peritoneal surface to its condition seen in those not cursed with hernia, was appreciated by all. His remarks, therefore, would relate chiefly to the latter steps of the operation; and he took occasion to say that Dr. McBurney deserved much credit for so ably attacking the idea that cicatricial tissue could not be depended upon for resisting strain placed upon it; for that was the argument commonly advanced against methods which sought the cure of hernia, the essential steps in which consisted of the formation of cicatricial tissue.

The advantages which Dr. McBurney's method offered were, first, the great freedom which it offered from the risk of septic process, of infiltration of pus, and spreading of phlegmonous processes originating in the wound situated at the peritoneal cavity. The upper part of the wound, from which septic processes might originate and prove very dangerous, was entirely open, and there could be no possibility of imprisonment of the inflammatory products. When the method was first introduced he was not favorably impressed by it, as it seemed to confine the patient unnecessarily long before recovery, and he thought of doing an operation which would give an equally efficient plug from granulation, and yet permit of recovery in about two weeks. He practised that method until he had, he said, endangered the welfare of quite a number of patients, and then gave it up entirely because, contrary to his expectations, recovery was often prolonged as much as in Dr. McBurney's operation, while the security against a return of the hernia was not quite as great. His method consisted in introducing a drainage-tube into the canal well up near the stump, and leaving it there, perhaps a week or two weeks, until granulations developed about it and, finally, after the drain had been removed, filled the canal with a cicatricial plug. As stated, he had abandoned the method for that of Dr. McBurney.

The reason, he supposed, why all did not have hernia was that the inguinal canal had at its internal opening a valvular arrangement which, when perfect, absolutely protected the canal from any distending force. In an old hernia there was no longer a canal, the internal ring having been dragged down until it reached and overlapped the external ring, and thus, instead of a canal with a valvular arrangement, there was only a hole in the abdominal wall, closed by peritoneum on one side and skin and subcutaneous fascia on the other. It was necessary in alternative measures that the ring should not simply be narrowed; there should be restoration of the canal, which, however, had not yet been accomplished. He knew of no way in which the valvular structure of the inguinal canal could be restored. At the time of operating it often looked as if it had been restored, but the subsequent history of the cases proved this view to be false. It not being possible to restore the inguinal canal to its normal condition, an alternative measure must be found which would furnish adequate support. Such a measure was Dr. McBurney's. The plug which that operation furnished was not less than the periphery of the ring; it extended even beyond it, overlapping it on both sides and binding it together in one solid mass. The plug could not be pushed forward because of its strong fibrous envelope. The only fear with regard to the efficiency of the method which he had entertained was the possibility of a hernia occurring at the margin of the cicatrix.

Dr. A. G. Gerster expressed appreciation at the lucidity of Dr. McBurney's paper. To lucidity it added another virtue, that of brevity. The question of cure of inguinal hernia was rather in the experimental stage; there was but one reliable test of any procedure, and that was time. The operative procedure could be divided into two steps; the first being the exposure and treatment of the sac. All now agreed that it was best to reach high upon the sac and deligate, in order to avoid the funnel-shaped depression in the peritoneal surface which led to hernia. The slitting up of the anterior wall of the inguinal canal, as done by Dr. McBurney, facilitated this step most remarkably. But all operations for cure of hernia were more or less complicated and difficult, because of the varying conditions in different individuals.

Referring to Dr. McBurney's remarks on the strength of the cicatricial plug, he said there was another class of laparotomy cases not mentioned, in which the conditions were more like those existing after his operation for inguinal hernia, and in which there was a strong tendency for the development of ventral hernia. He referred to the laparotomy cases in which an intra-mural abscess formed, resulting after healing in a cicatricial plug with conditions back of it similar to those which Dr. McBurney tried to obtain in his operation; yet in those very cases hernia often developed subsequently. The cicatrix got thinner and thinner, and finally ventral hernia took place.

Thus the decision as to the curative value of Dr. McBurney's operation must be determined by time.

Dr. Robert Abbe said that a year ago, when this operation was discussed at the Surgical Society, he thought it would be likely to prove defective, in leaving a cicatrix which resembled the median cicatrix left by laparotomy in which ventral hernia formed; but subsequently he tried it, and now, after its performance in seventeen cases, he had become convinced that it was the best yet employed. He had operated by different methods about one hundred and seventeen times, in the first fifty-two of which he did Macewen's operation. Macewen, when asked by other operators why they did not succeed in securing a radical cure, said it was because they did not do the operation properly. Dr. Abbe was of opinion that an operation which could be done properly or successfully only by the one introducing it, was not a correct one to offer the profession. He was sure that remark did not apply to Dr. McBurney's. One of the chief objections to Macewen's operation was the fact that the hernial sac was extremely variable, being sometimes as thin as tissue-paper, and it was impossible then to obtain a boss inside to prevent subsequent recurrence. He knew this to be true in one case, in which he did Macewen's operation on a hernia on one side, and McBurney's on a hernia on the other side. The patient died of another affection two weeks afterward, and he found at the autopsy that Macewen's operation had not produced the boss claimed for it. On the other side there was a smooth peritoneal surface, as Dr. McBurney had stated existed after his procedure. There was great liability to submural abscess after Macewen's operation. That which especially recommended Dr. McBurney's was its extreme simplicity, so that any practitioner could perform it. He had not felt that it was safe to leave the patient without any support for some time subsequently, and consequently advised the use of a light truss.

Dr. McCosh had the records of four cases in which Dr. McBurney's operation had been performed, fifteen months ago, and in none had there been a return. Other cases of more recent date showed no return. It had often occurred to him that it might be dangerous to leave such a hole in the abdominal cavity during granulation, lest intestines should escape, and this had taken place in one of his patients, who in a fit of delirium got out of bed, attempted violence, and tore open the wound. This danger could be overcome by suitably placed sutures.

Dr. Hartley had tried Macewen's, Ball's, and other methods, but found none equal to that described by Dr. McBurney. The latter best overcame the tendency to a funnel-shaped opening inside, which was the great productive cause of hernia. He had never seen the necessity for using a truss after Dr. McBurney's method.

Dr. F. W. Murray thoroughly endorsed Dr. McBurney's operation. He presented a man operated upon last fall for double scrotal hernia of twenty years' duration. Since 1882 the man had been quite helpless, the herniæ were irreducible. There had not yet been any return.

Dr. Syms also endorsed the author's method of operating, and mentioned a case in which he had performed it, six months ago, there having been no return. The sac had contained fourteen feet of intestine.

Dr. V. P. Gibney had had no experience with McBurney's operation, but he had seen fewer returns after its performance, in patients who came to the hospital, than from any other method. There had been some, but he afterward learned that the method had not been fully observed by the operator. It had been argued that, if a hernia was operated upon, it could subsequently be better controlled by a truss, but the last year or two he had seen patients with quite an extensive cicatrix, whose hernia it was very difficult to retain with a truss. With regard to the behavior of cicatricial tissue, he had found in the operation for shortening the tendo Achillis that there was a strong tendency for the V-shaped cicatrix left after the operation to become elongated. The cicatrix, however, was stronger when formed after granulation of an open wound. Of course, there was not the same strain brought to bear upon the plug after McBurney's operation for hernia.

Dr. McBurney closed the discussion, and said with regard to the test of time, that Macewen's patients showed no greater tendency to return between the first and fourth years than after the fourth year. He had himself refused no case excepting that of a man whose hernia was but a trifle compared with his other ailments. He did not mean to say, however, that he would operate in all cases. As to approximation of the two rings, it should be borne in mind that, while the inner edge of the internal ring was brought down toward the external ring, the upper edge remained in the one place. On splitting up the canal it would be found that the sac could be lifted an inch or an inch and a half farther.

Dr. Laurence Johnson was elected trustee for unexpired term.

Dr. A. Jacobi had read an article from *The Evening Post*, stating that the Legislature had passed a bill, permitting a county to withdraw its insane from State institutions, to be cared for in its own institutions. This was done in the face of the fact that there was a bill providing for State care of all indigent insane which had not yet been reported upon by the committee. Dr. Jacobi then read a lengthy resolution, which was adopted by the Academy, disapproving of this act of special legislation, and urging the passage of the bill approved of by the State Charities Aid Association, providing for State care of all indigent insane.

Stated Meeting, March 7, 1889.

Alfred L. Loomis, M.D., President, in the Chair.

THE TREATMENT OF ACUTE AND SUBACUTE NEPHRITIS.

Dr. Francis Delafield said that in bringing this paper before the Academy he must acknowledge at the outset that he had no new drug to propose, no new plan of treatment to advocate. It was rather, if possible, to determine how plans of treatment and drugs already employed were to be intelligently applied in individual cases of acute and subacute nephritis. To give an idea of the methods of treatment ordinarily employed he quoted shortly from French, German, and American authors. It was evident from the quotations that the writers' main object was to make up for diminished quantity of urine by acting on the skin and intestines, and that they regarded as the principal danger of acute nephritis accumulation of excrementitious substance in the blood. Some of the authors, in addition, believed they could rest the kidneys, while inflamed, by producing diaphoresis or catharsis, and that such rest would diminish the severity of the nephritis. Some thought that by sufficiently large ingestion of fluids the inflammatory products could be washed out of the kidneys. Digitalis was regarded with apprehension by some, while others warmly advocated its use. Morphine in considerable doses was employed by some for the relief of uræmic attacks, and in small doses by others to relieve vomiting and restlessness, while still others deprecated its use under any circumstances. General blood-letting seemed to be restricted by most to nephritis of pregnancy, attended from the first by high temperature, and cerebral symptoms. The disposition at the present time to direct attention and treatment to the symptoms of nephritis, rather than to the nephritis itself, was so general that he thought it might be wholesome to look at the subject from the opposite point of view, and to direct attention, not to the function of the kidneys but to the kidneys themselves.

In order to do this it was necessary at once to separate cases of acute nephritis from those of subacute nephritis, for in the two states the condition of the patient was altogether different.

First, of acute nephritis, most cases met with compli-

cated scarlatina, diphtheria, or pregnancy, less frequently one of the infectious diseases or severe inflammation, or as a primary lesion. In all cases there was congestion and exudation. The exudate consisted of three elements, in varying proportion—serum, white blood-cells, and red blood-cells. There might be swelling of the tufts of the glomeruli; degeneration and death of the renal epithelium; growth of new connective tissue in the stroma of the kidney. According to the severity of the nephritis would there be symptoms of varying number and severity. There were in the urine albumen, casts, red and white blood-cells. In more severe cases there were constantly additional symptoms of fever, prostration, loss of appetite, nausea, vomiting, anæmia, and, in some of the more severe cases, also headache, delirium, stupor, convulsions, labored heart-action, hypertrophy of the left ventricle, pulse of high tension, and dropsy. In the cases in which the urine was suppressed a number of days, the patient had alternating stupor and delirium, and passed into a typhoid state. The regular duration of a fair-developed acute nephritis seemed to be about four weeks. The natural termination, whether with or without treatment, was in recovery, but the more severe cases might prove fatal. The cases in which there was, from the first, a growth of new connective tissue in the stroma were likely to become chronic.

What were the indications for treatment? Evidently, in the very mild cases, no treatment was necessay, except to keep the patients in bed, and on a fluid diet. In the more severe cases it was often proper to interfere, in order to secure greater comfort and safety for the patient. The first condition which called for treatment was the nephritis itself. In treating this, it was to be remembered that although the quantity of urine voided was small its quality was good, for it contained a fair proportion of excrementitious solids to the ounce of urine; that the secretion of urine must necessarily relieve the congestion of the kidneys, so that it was better that the kidneys should perform their function than be at so-called rest; that, so long as the congestion of the kidneys persisted, the quantity of the urine would be diminished; that a considerable diminution in the quantity of urine, continued one or two weeks, was often perfectly well borne by the patient. It was not, therefore, necessary to pay attention to the diminished quantity of urine, and try and make the skin or intestines do the work of the kidneys. It was wiser, by relieving congestion of these organs, to enable them to do their work, knowing that the moment they began to do this their congestion would be still further diminished, and that, though the nephritis continued, the excretion of urine might then be sufficient. Fortunately we had at command means by which the congestion of the kidneys could be diminished—not completely, it was true—but partly, for short periods. These means were to cause the blood to collect at the surface of the body by the application of heat to the entire skin, the use of dry or wet cups or heat over the lumbar region, the empirical use of calomel or sulphate of magnesia, in small doses, repeated at short intervals until the bowels began to move; the use of such drugs as would decrease the increased arterial tension. While the nephritis was still active, it was not expected by any means that the urine would be brought up to its full normal quantity, but only that a sufficient quantity should be passed to insure the safety of the patient. The febrile movement required no treatment. The prostration, nausea, and vomiting only called for rest in bed, and fluid diet. The anæmia ought unquestionably to be prevented or relieved, but while the nephritis was active he knew of no way in which this could certainly be done. When convalescence was established, the anæmia improved under ordinary methods.

The cerebral symptoms were those to which most attention had been directed. There could be no question that they regularly accompanied contraction of the arteries with increased tension and labored heart-action. No matter what views one entertained as to the cause of this change in the circulation, he believed the treatment was best directed to the arteries themselves rather than to an uncertain cause of the contraction. Fortunately there were drugs which acted promptly and efficiently for this purpose, and of these the most suitable were aconite, chloral hydrate, and opium, preferably given in small doses at regular intervals, so that their use could be continued for some time. It was wise to watch the condition of the heart and arteries, and as soon as increased arterial tension developed not to wait for the manifestation of cerebral symptoms, but relieve it at once. The treatment of a case of acute nephritis, therefore, resolved itself into the treatment of the nephritis itself, and of the contraction of the arteries which might accompany it. To carry out this treatment he could, from personal experience, strongly recommend the following routine: The patient was put to bed, the entire skin washed every day, and for two successive days drachm-doses of the sulphate of magnesia were given every hour until one ounce had been taken or until the bowels began to move; after this the tincture of aconite was given in doses of a minim every hour. Within a few days the albumen in the urine would be found diminished, the pulse soft, the dropsy would have disappeared, but the patient would still be anæmic. The milk was then to be gradually replaced by solid food, and iron and oxygen given.

As to subacute nephritis, the distinction between acute, subacute, and chronic inflammation was an arbitrary one, but was often of real convenience. This was especially true of nephritis. As opposed to the conditions described in acute nephritis, in the subacute form the inflammation was long-continued, there was no congestion, the exudation was of the profuse, almost dropsical, character met with in other subacute inflammations, as pleurisy with effusion; there were permanent changes of the stroma and glomeruli of the kidney. The interference with the function of the kidney did not relate to the quantity of the urine, for that was often in excess, but with its quality, the proportion of solid matters decreasing as the disease advanced. The symptoms were largely due to the effect of the nephritis on the composition of the blood and the nutrition of the body. The anæmia, dropsy, and loss of strength were prominent features of the disease. Contraction of the arteries was absent, or present only at intervals. The cerebral symptoms were chronic rather than acute. It might happen, however, that in the course of the subacute nephritis there would be exacerbations of the inflammation during which the changes in the kidneys and the symptoms were the same as those of acute nephritis. Subacute nephritis was especially common as a primary disease, and as a sequel of scarlatina and diphtheria. The patients lost strength, became anæmic, suffered from nausea, vomiting, diarrhœa. There might be inflammation of the retina, the arteries were for the most part relaxed, but might sometimes be contracted; dropsy was apt to be a marked symptom. The urine might be somewhat diminished, but was often in excess; the specific gravity and quantity of solid matters diminished as the disease progressed. The quantity of albumen was considerable. Some patients continued to get worse in every way, and died within one or two years; some exhibited a part or all of the symptoms for weeks or months, and then seemed to be better, or might again become ill, and thus go on for years, sometimes better, sometimes worse. A very few patients seemed to recover permanently.

The conditions which required treatment were: 1, The subacute nephritis; 2, the changes in nutrition and in the composition of the blood; 3, the dropsy; 4, the condition of the arteries; 5, the cerebral symptoms; 6, the acute exacerbations of the inflammation.

For the nephritis, the best treatment was residence in a suitable climate, which should be warm, and where the patient could lead an out-of-door life. If the patient resided in a cold climate, it would be necessary to confine him to the house much of the time. Except during the

exacerbation the patient should take as much of solid foods and of fats as he could digest. The excessive use of milk and of mineral waters was to be avoided. It was possible that the use of opium or of the bichloride of mercury might favorably affect the nephritis. The anæmia was the most important symptom, and it was most efficiently treated by the internal use of iron, the inhalation of oxygen, combined with massage and relief of constipation. With this treatment in many patients the improvement was satisfactory, but in some no such improvement took place.

The dropsy might never be more than an inconvenience, or it might be the most distressing feature of the case. It was apt to reach its greatest development with low arterial tension and often with large excretion of urine. In some cases the treatment of the anæmia and the regulation of the diet would answer at the same time for the treatment of the dropsy. In other cases different means must be employed. When subacute nephritis had lasted any length of time, the quantity of urea excreted fell to six grains, or even less, to the ounce of urine, and the patients should therefore pass daily seventy or more ounces of urine. It was wise not to increase the urine more than would be sufficient to enable the patient to excrete his five hundred grains of urea a day. The quantity of fluid which he took should be proportioned, as far as possible, to the quantity of urine passed, not allowing the former to exceed the latter when removal of dropsy was desired. In extreme cases of dropsy it was necessary to purge, sweat, puncture the skin, tap the serous cavities; but when these measures became necessary, it meant that the case was an unfavorable one.

The condition of the arteries and of the left ventricle of the heart should be watched throughout the disease. High arterial tension might be controlled by nitro-glycerine, chloral hydrate, or opium. Low arterial tension should be heightened by digitalis, or ergot; but thus heightening the arterial tension he had not found to be serviceable to the patient. To avoid cerebral symptoms, one had constantly to watch the excretion of urea and the condition of the arteries. The quantity of urine should be kept large enough to make up for its diminished solid constituents. Increased arterial tension should be at once relieved. The acute exacerbations of subacute nephritis could be managed in the same way as an attack of acute nephritis.

Dr. Thomas E. Satterthwaite sent his views on the treatment of acute and subacute nephritis in writing, but they were not limited strictly to those forms of inflammation, and therefore were not entirely applicable to the discussion. There were two facts, he said, which should be borne in mind: 1, That there were quite different pathological conditions underlying the several manifestations of these affections; 2, that very few cases were primary. He did not wish to appear as pretending that we could always diagnosticate each of the several forms of Bright's disease, or that it was essential to do so, but he did desire to have it understood that, the more clearly the pathological condition and its relations to disease in other parts of the body was appreciated, the better would the physician be prepared to treat it. Attention should also be directed to predisposing diathesis, as the rheumatic and phthisical. The writer mentioned appropriate treatment for special symptoms, and, speaking of pilocarpin as having restored to life patients buried in profound coma, stated that, in some instances, it had produced most alarming syncope. The successful treatment of Bright's disease, he concluded, called for many kinds of remedial measures, and experience, in any given case, might have to be relied on to determine what might be the best measure.

Dr. A. Jacobi thought the paper had stated in very few words all that could be rationally said on the subject, provided one was satisfied with a few words which hit the mark. He believed the treatment given by the author was more or less that of all rational physicians of to-day. Dr. Delafield was a little better off than Dr. Satterthwaite because his divisions and subdivisions of Bright's disease were so much simpler than the seven or nine made by Dr. Satterthwaite.

Agreeing with the author in most respects as to treatment, Dr. Jacobi stated a few points wherein he differed, and, thinking Dr. Delafield had recommended caffein as a heart tonic in connection with uræmia, he said that in his experience coffee and caffein had bad effects in cerebral hyperæmia, whether passive or active. Leeches applied to the septum nares had recently shortly relieved a woman from uræmic coma of unknown origin, while he was confident caffein would have made her condition worse.

Regarding bichloride of mercury, he had used it a number of years in all cases of chronic interstitial inflam mation in different organs, administered in small doses for months. It was of equal benefit in interstitial inflammations of the kidneys, but rather of the chronic kind.

Dr. Jacobi thought physicians would be more successful in the treatment of acute and subacute nephritis if they were to look for it more commonly than they did. It occurred not alone in nephritis, but often also after measles, and especially after typhoid fever, and also after other acute diseases, and would be found much more remediable if taken early. That form of nephritis seen in men after the fortieth or fiftieth year, the result of vascular degeneration, had been benefited in his experience by adding bromides to the general treatment. He believed digitalis should be avoided early in acute nephritis, as it acted as an irritant on the kidneys. Where a cardiac stimulant was desired which did not act as a kidney irritant, he gave sparteine, which was absorbed and eliminated readily, and produced no cumulative effects.

Dr. F. P. Kinnicutt said that he had little to add to the suggestions contained in Dr. Delafield's paper. Fortunately, in the larger proportion of cases of acute nephritis occurring after exposure to cold or infectious diseases, there was a marked tendency to self-limitation and spontaneous recovery. Hence in many cases simple confinement to bed, with external warmth and a milk-diet, constituted the indicated treatment.

He could heartily endorse Dr. Delafield's views in regard to the desirability of principally concentrating our attention upon the inflammation of the kidney and the disturbances of the circulation.

It was well to bear in mind, in connection with the circulatory disturbances, the not very infrequent occurrence of sudden death from heart failure, in cases of acute nephritis, the usual symptoms of uræmia being wholly absent. A series of such cases, occurring in children suffering from acute nephritis, had been published by Dr. Goodhart, of Guy's Hospital. Great dilatation of the left ventricle, without valvular disease, was found to exist. The explanation was not far to seek. A heart, whose nutrition had suffered presumably from the disease, had suddenly dilated from the increased amount of work thrown upon it by arteries obstructed by spasm or changes in their coats, or both. In cases where evidence of cardiac failure from high arterial tension existed, heart stimulants, combined with means to relieve tension, were plainly indicated. Dr. Kinnicutt was in the habit of relying upon those cardiac stimulants which acted upon the heart without, at the same time, increasing the contraction of the vessels, viz., strophanthus and the sulphate of sparteine. To relieve arterial tension, he preferred the pure vaso-motor dilators to some of the drugs mentioned by Dr. Delafield. Among the vaso-dilators the nitrites ranked first, and of these, nitro-glycerine was in most common use. He was convinced, from practical experience, that nitro-glycerine, given in sufficiently large and frequently repeated doses, was a most potent means of reducing arterial tension. On theoretical grounds, digitalis was contraindicated in cases of threatening heart failure from arterial tension. It caused contraction of the small arteries at the same time that it increased ventricular contraction.

Dr. J. West Roosevelt thought that in the treatment of subacute nephritis, as the author had stated, there were

a good many indications. There were cases in which the high arterial tension was in itself a source of danger, and demanded relief. Though arterial tension was generally regarded as dangerous, the reasons for such danger were not, it seemed, commonly understood. Except for the danger to the heart from overwork, or to the vessels on account of changes in their walls in old cases, there was no direct danger from arterial tension. The indirect harm came from obstruction to the capillary circulation, owing to contraction of the arterioles. There being a spasmodic condition of the arterioles and capillaries more blood could, perhaps, be forced through by administering digitalis, but that seemed to him a very clumsy way to accomplish the purpose. The digitalis must produce the result by forcing an already strained heart to do more work. The use of vaso-motor dilators, among which he included chloral, would seem more rational. But this was a passing makeshift to carry the patient beyond a certain danger-point. Real treatment consisted in re-establishing the functions of the kidneys as far as possible.

He was glad to hear Dr. Delafield make the statement that uræmia, manifested in the form of coma and convulsions, was to be feared in acute cases only during the earlier days, while patients who lived longer passed into a typhoid state and died, not in what ordinarily was called a uræmic condition. It had always seemed to him unfortunate that the idea should become firmly fixed in the mind of the profession that uræmia necessarily followed interference with renal function. As a matter of fact, it might not be manifest in total suppression of the urine of some days' duration. Clinically he had found two sets of uræmic cases: (1) Those with coma and convulsions accompanied by marked increased arterial tension, and here nitro-glycerine and nitrites were indicated; (2) those in which patients suddenly became comatose, in whom there was no increased tension. Here it might be necessary to stimulate the heart.

Dr. Joseph E. Winters had observed that in subacute cases exercise caused an increased amount of albumen in the urine, and the amount of albumen in the urine he thought was the best indication as to the condition of the patient. Therefore in recent subacute cases the same rule should apply as in acute cases, to place the patient in bed and regulate the diet so as to decrease the amount of albumen. Especial attention should be paid to the function of the skin, and the food should not contain much of the albuminoids. Milk, fish, and fats, as cod-liver oil, were indicated. While he always used iron in subacute nephritis, as was the fashion, yet he doubted whether in such cases it had the good effect seen in anæmia from other causes. He had observed that patients who had other indications of a severe attack and had free effusion into the skin were less likely to have nervous symptoms, or to suffer from uræmia, than those who had no œdema. Perhaps it was because a part of the urea which the kidneys failed to excrete filtered into the cellular tissue and there proved less harmful.

Dr. Laurence Johnson said that, attention having been directed more particularly to the dangers connected with the use of pilocarpin, he wished to give his experience with its good effects in uræmic poisoning. He had used it for several years, and had had most beneficial results accrue in a short time in cases of coma and convulsions. He thought there was little danger in its use on strong patients. He gave hypodermatically one-sixth of a grain of hydrochlorate of pilocarpin, repeated in fifteen and again in twenty minutes, and a fourth time after two hours and a half, sometimes running up altogether to one grain.

The President thought the physician, when brought face to face with acute or subacute nephritis, should first take into consideration the age, the predispositions, and the habits of his patient. The management of a case in a child would evidently differ from the management of a case in an adult. In acute Bright's disease, as a rule, the treatment should be rest in bed in an even temperature, regulation of the diet, and moderate purgation. If there were convulsions and nervous symptoms due to accumulation of excrementitious products, something more would need be done. If there were high arterial tension in young subjects, the cardiac tonics spoken of during the discussion were contraindicated. The arterial tension should be reduced by drugs acting on the vaso-motor system. Dr. Delafield had mentioned mercury and the salines. In his own experience calomel in small doses at short intervals, accompanied by the free use of salines, best reduced arterial tension. These measures, with the addition of counter-irritation over the kidneys and stimulation of the surface of the body, would, in all probability, bring about a good result unless in patients reduced by special circumstances, such as the alcoholic habit.

In subacute nephritis there was a different condition, and it called for different management. If he had become more positive on one point than on another in the treatment of these cases it was that they should not be depleted. All those means should be brought into service which improved nutrition. Iron, as far as he could judge, was of little use. Change of climate was important. If the urine was diminished in quantity, and there was heart failure, digitalis was indicated only as long as it had the effect of increasing the urinary excretion; when it ceased to have this effect it would do harm. It was contraindicated in high arterial tension. Where there was a weakened heart, from accumulation of poison in the system, nothing equalled small doses of opium given regularly for an indefinite length of time.

Dr. Delafield, in closing the discussion, corrected Dr. Jacobi's impression as to his recommending caffein; he had only stated that it was recommended in the French "Dictionary of Medicine." Bichloride of mercury was an old stand-by in subacute nephritis; but he was unable, inasmuch as other remedies were employed at the same time, to tell just how much benefit could be attributed to its use. Dr. Jacobi had called attention to an important fact, namely, that subacute nephritis occurred much more frequently than was supposed. As to the relief of arterial tension, the method differed decidedly in acute from that in subacute nephritis. In the former, nothing relieved the arterial tension so quickly as small doses of sulphate of magnesia or calomel given in small doses only until the bowels began to move. The drug was not given for the purpose of purging the patient. Its administration was empirical, as it was in acute peritonitis. Having thus reduced the arterial tension, it could best be maintained by aconite. But in subacute nephritis calomel and sulphate of magnesia did not reduce arterial tension; there it was necessary to give a drug which dilated the arteries, which might be, according to the individual case, nitroglycerine, chloral hydrate, etc. In low arterial tension in subacute nephritis, the indications for digitalis were such as had been pointed out by Dr. Loomis.

He did not agree with Dr. Winters in the view that the amount of albumen in the urine was the chief indication as to the progress of the case. It was only one of several indications of as much importance. He also differed from him in the view that the feeding should be regulated with reference to the amount of albumen in the urine. As to iron apparently producing no results in anæmia from subacute nephritis, it might not be manifest in the diminution of the dropsy nor as regarded the quantity of urine, but examination of the blood might show an increased amount of red blood-cells and hæmoglobin, and thus an improved state.

The President impressed upon the Fellows the necessity for individual effort in raising the additional twenty-five thousand dollars required to complete the purchase of the site and put up a new building in Forty-third Street.

He also said that if it was the desire of the members to continue the hour of meeting at eight o'clock, they must arrive at that time; if they could not come until half-past, then the hour of meeting should be changed to accord.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

COLECTOMY VS. COLOTOMY IN MALIGNANT DISEASE OF THE INTESTINE—THE COLLEGE OF SURGEONS AND ITS CUSTODIANS—THE POLICY OF THE BRITISH MEDICAL JOURNAL—FURTHER DISCIPLINARY POWERS FOR MEDICAL AUTHORITIES—GOVERNMENT GRANTS IN AID OF HIGHER SCIENTIFIC EDUCATION—THE ZANDER INSTITUTION.

LONDON, March 5, 1889.

JUDGING by the steady increase in the number of operations on record, it might be thought that colectomy was growing in favor as an operative measure in malignant disease. Anyone, however, who, having formed this opinion, had attended the last meeting of the Medical and Chirurgical Society, would probably have come away with somewhat altered views—that is, if he were disposed to accept the general tenor of the discussion as fairly representative of surgical opinion on the subject. The operation was then condemned by some even of those who had practised it.

Dr. Kendal Franks, of Dublin, read an elaborate paper in which he described two cases of his own and gave a summary of fifty-one published cases. In forty per cent. of these the operation had proved fatal. One of Dr. Franks' own cases terminated fatally, but the other was most successful. It was that of a man, fifty-eight years of age, who was admitted into hospital suffering from dyspeptic symptoms and diarrhœa; a remarkably movable tumor was found in the abdomen in the middle line below the umbilicus. Abdominal section was performed, and the tumor was found to be an epithelioma surrounding the transverse colon near the hepatic flexure. The bowel was divided on each side of the tumor and the latter then removed, together with several enlarged glands found between the layers of the meso-colon. The divided ends of intestine were sutured together and returned to the abdominal cavity. On the sixth day there was a copious motion *per anum*, and the bowels acted regularly afterward. The patient was now—four months after the operation—in very good health, and had increased in weight. While admitting that colectomy rarely effected a cure, the author nevertheless urged that it was justifiable as a palliative measure, and frequently demanded. Even when the growth recurred, it usually did so in the liver or mesenteric glands, and death was then much easier than when the intestine was occluded. The mortality after immediate suture of the intestine and after the formation of an artificial anus was nearly equal, but the former procedure was preferable. Dr. Franks pointed out that the death-rate had been reduced in the later cases, and that a further reduction might be anticipated.

Mr. Bryant then spoke, and said his feeling was against the operation. Only one case out of fifty-one had resulted in a cure, and as a palliative measure he gave the preference to colotomy. The latter operation not only gave complete relief, but death occurred comparatively painlessly from asthenia from secondary growths. Patients lived for four, five, or six years after the operation; certainly three or four years might be looked for if the operation were done before urgent symptoms of obstruction arose.

Mr. Treves followed, and did not express a much more favorable opinion. He congratulated Dr. Kendal Franks on his brilliant operations, but, while thanking him for his collection of cases, remarked that he considered it to be the death warrant of the operation. Intestinal cancer grew rapidly in a region so abundantly supplied with vessels and lymphatics. If the cancer attacked the ascending or the descending colon, it was practically impossible to take out the whole of the disease; in the mid-region of the colon it was only just possible. Colectomy was at best a plastic operation, and that was one very ill-adapted to a cancerous patient. He had himself brought forward a case six years ago, but since then he had never seen a case, and he expected he never should see a case in which he should have any idea of resecting the bowel again. He thought the operation compared badly with lumbar colotomy.

Mr. Bernard Pitts was somewhat more hopeful. He remarked that cancer of the bowel lent itself to removal as easily as in other parts; the difficulty was to get the cases early enough.

Dr. Kendal Franks then replied in defence of the operation. Though colotomy was the best operation for rectal cancer, he could not admit that it was better than colectomy for many other cases of intestinal cancer; it was admittedly only palliative. He predicted that with more practice in abdominal surgery colectomy would become commoner, and said he regarded his collection of cases as rather the herald than the death-warrant of the operation.

Who shall decide when doctors disagree? Such might fairly have been the question of an outsider on beholding the scene outside the College of Surgeons on Thursday last. The authorities of the College not only shut the doors to keep out their own Members and Fellows, but added insult to injury by having obtained the services of the police to protect the building from any threatened attack. Did the Council imagine that professional men would act like roughs? Balked of their intention of meeting in their own College, the assembled Fellows and Members betook themselves to an adjoining restaurant, where it was decided to bring the long-standing grievances of the Fellows and Members of the College before Parliament—a draft bill on the subject being presented. Earlier in the day an application was made in the law courts for an injunction to prevent the Council from closing the College. This proved unsuccessful. I understand, however, that the questions of law involved will come before the courts at once, so the battle will be both legal and parliamentary.

A protest against the manner in which the *British Medical Journal* is conducted has been drawn up and is being extensively circulated. It has already been signed by many influential members of the profession. The "Mackenzie-Bergmann" controversy and the action of the *Journal* in relation thereto has led up to the present procedure.

The General Medical Council are promoting a bill to give further disciplinary powers to the different medical authorities to withdraw, or restore, the various qualifications granted by them. A bill for this purpose has been drawn up by the legal advisers of the Council at the request of the president, and will in due course come before the Council for consideration.

It is reported that the Government has decided to make a grant in aid of higher scientific education, and that King's and University Colleges (which are also medical schools) will participate in the grant.

An unfortunate misprint occurs in the "London Letter" in your issue of February 23d. "Lander Institution" should read "Zander Institution," being named after Dr. Zander, with whose name many of your readers are doubtless acquainted.

PRENATAL CIRCUMCISION.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In THE MEDICAL RECORD of November 3, 1888, page 535, I reported a case of circumcision by maternal impression.

In THE MEDICAL RECORD of December 15, 1888, Dr. M. G. Lowrey, of Boulder, Col., thinks the case of so much importance to the profession that it should be established beyond question. I therefore enclose the certificate of Dr. R. Tobey, who assisted me in the operation and afterward attended the mother in confinement.

I do not propose to account for the phenomenon on a

scientific basis, but can furnish the doctor and the professor with indisputable evidence as to the facts.

J. G. HARVEY, A.M., M.D.

BLUE MOUND, ILL., February 12, 1889.

(*Copy.*)

I hereby certify that I assisted Dr. Harvey in circumcising the son of Mr. S—— as reported in THE MEDICAL RECORD of November 3, 1888, and that I attended his mother in confinement on March 31, 1885, just seven months and twenty days after the operation, at which time she was delivered of a male child, which was perfectly circumcised, and presented exactly the appearance of having been circumcised in the same manner as the boy previously operated upon, even showing the marks of each suture.

R. TOBEY, M.D.

MACON, ILL., February 10, 1889.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 10 *to March* 16, 1889.

BAXTER, JEDEDIAH H., Colonel and Chief Medical Purveyor. By direction of the Secretary of War, will proceed to New York City on public business connected with the Medical Department, and on completion thereof return to his station in this city. Par. 18, S. O. 57, A. G. O., Washington, D. C., March 11, 1889.

GREENLEAF, CHARLES R., Major and Surgeon. Is appointed member of Board to meet in this city, on March 11, 1889, for the purpose of revising the blank forms now in use in the Army, and preparing the "Book of Forms" for issue. Par. 13, S. O. 55, A. G. O., Washington, D. C., March 8, 1889.

SHUFELDT, ROBERT W., Captain and Assistant Surgeon, By direction of the Secretary of War, having been found incapacitated for active service by an Army Retiring Board, is granted leave of absence until further orders, on account of disability. Par. 7, S. O. 56, A. G. O., Washington, D. C., March 9, 1889.

JOHNSON, RICHARD W., Captain and Assistant Surgeon. By direction of the Secretary of War, is relieved from duty at San Carlos, Ariz., and will report in person to the commanding officer, Whipple Barracks, Ariz., for duty at that station. Par. 15, S. O. 57, A. G. O., Washington, D. C., March 11, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending March 16, 1889.

HESLER, FREDERICK A., Assistant Surgeon. Detached from Naval Hospital, New York, and ordered for examination preliminary to promotion.

OGDEN, FREDERICK N., Assistant Surgeon. Ordered to Receiving-ship St. Louis, Navy Yard, League Island.

BRYANT, PATRICK H., Assistant Surgeon. Detached from Receiving-ship St. Louis, and to the Naval Hospital, Chelsea, Mass.

Medical Items.

THE LATE DR. JOHN C. DALTON.—At a special meeting of the Trustees of the College of Physicians and Surgeons in the city of New York, held February 26, 1889, the following minute was adopted, and ordered to be entered on the records of the Board:

"The Trustees of the College of Physicians and Surgeons desire to express their deep sense of the loss sustained by the College in the death of its President, Dr. John Call Dalton. During the thirty-four years of his connection with the College, first as Professor of Physiology and afterward as President, Dr. Dalton took a warm interest in all that concerned the welfare of the institution. The College was, in a special and peculiar sense, his real home. A large portion of his daily life was spent within its walls, and here was accomplished most of the work which rightly placed him in the front rank of American physiologists. Although a man of broad sympathies which carried him into other departments of science, and into questions of public affairs, his life was centred here, and nothing lay so near his heart as the College of Physicians and Surgeons, its best interests, and its advancement to a higher plane of professional education. As a teacher, Dr. Dalton possessed qualifications of the highest order. He was always master of his subject; while, by a seeming paradox, his subject mastered him. There was, for this reason, a certain contagiousness in his absorbing interest in his theme. Even the dullest facts, under his treatment of them, acquired a new freshness, either by some original illustration, some presentation from an unusual standpoint, or by a quaintness of expression that gave them an air of novelty. But nothing displayed so well his rare genius in imparting knowledge as the skill with which he simplified the most difficult subject by the orderly arrangement of its principles, and the transparent clearness of his language. To this directness and simplicity of speech, which was typical of the whole character of the man, was joined a peculiar charm of manner that fascinated everyone who came in contact with him. With children he was a great favorite. From him an explanation of the mechanism of some familiar object, or a story of natural history, told in his inimitable way, brought greater delight to the child at his knee than the most exciting fairy tale from anyone else. And so in the lecture-room, although Dr. Dalton had none of the more conspicuous but commonplace gifts of oratory, there was a certain personal magnetism about him—a rare, subtile quality of vital power, that at once placed him in sympathy with his audience and gave him absolute control over it. To the office of President Dr. Dalton brought a practical knowledge of men and affairs, a love of work, and thoroughness in it, that qualified him for the position to a degree that now seems almost providential. During his busy administration the College was removed to its present situation, its new buildings were erected, and its curriculum enlarged. Out of these changes grew a host of difficulties, many of them of an entirely novel character, which could be solved only by the exercise of the soundest judgment and the most laborious attention to details. Dr. Dalton approached this task in a conscientious spirit, determined that the trust imposed by the generous benefactors of the College should be carried out faithfully. With health already impaired by the disease of which he died, his labors were indefatigable. He seemed to feel that the time was short; but when the end came, he had the satisfaction of knowing that his work had not been in vain. The ambition of his later years was realized. He had lived to see the College he loved with a more than filial affection entering with bright prospects upon a new era of prosperity. Could he have known, also, with what a fulness of gratitude his unselfish labors were regarded by all of the alumni and officers of the College, who can doubt that even his well-merited scientific honors would have had less value to him in his dying hour than such a tribute to his personal character?—GEORGE G. WHEELOCK, M.D., *Registrar.*"

THE EXCITING CAUSE OF URTICARIA.—Dr. Jacquet regards local irritation as the exciting cause of the pruritus and wheals of urticaria, the underlying cause being an abnormal condition of the cutaneous vaso-motor nerves. He has found that, by hermetically covering any portion of the body in a case of generalized urticaria, the pruritus and wheals almost immediately disappear from that part, the uncovered surface remaining unchanged.

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Original Articles.

KOCHER'S METHOD OF REDUCING SUBCORACOID DISLOCATIONS OF THE HUMERUS—A PLEA FOR ITS EMPLOYMENT IN EVERY RECENT CASE.[1]

BY CHARLES A. POWERS, M.D.,

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CONSIDERATION of the various forms of the luxations which occur at the shoulder-joint, their causation, mechanism, pathology, and immediate and subsequent treatment, is without the scope of this brief paper. In the few moments which are at my disposal I shall call your attention to but one point, the reduction of the subcoracoid form by the method known as "Kocher's."

And I venture to assert that there is no surgical procedure of equal simplicity and of like importance as little known to the profession of our country as is this.

In the *Berliner Klinische Wochenschrift* for February, 1870, Professor Theodor Kocher, of Berne, first published the results of his cadaveric researches regarding the mechanism of this dislocation, and gave to the profession the most logical, scientific, and successful plan for its reduction which has yet been presented.

His theory is that the end to be attained in attempts at reduction is to open the rent in the capsule and to relax its intact portions without employing force.

When the head of the bone passes from the glenoid cavity to beneath the coracoid process it rends the capsule at its inner and lower part. The rent extends to the insertion of the tendon of the subscapularis, lacerating some of the fibres of that structure.

Tension in the capsule is greatest at its upper part, between the tendon of the long head of the biceps and the upper border of the subscapularis.

The posterior portion of the capsule and the tendons which reinforce it are preserved and stretched across the glenoid cavity. At the point of greatest tension the capsule is reinforced by the coraco-humeral ligament.

When, in a given case of subcoracoid luxation, the arm is adducted and strongly rotated out, the rent in the capsular ligament will be freely opened; but as the upper and lower parts of the capsule are yet tense the head of the bone remains firmly fixed against the anterior edge of the glenoid cavity. If, however, the arm is brought forward and upward across the chest, the upper part of the capsule relaxes; but the lower part, being yet tense, serves as a fixed point about which the head of the bone revolves and thus slips into its cavity.

Professor Kocher turned this anatomical knowledge to account in formulating the following procedure[2] for the reduction of a humerus, the head of which rests beneath the coracoid process.

Suppose the right shoulder to be the seat of the injury. The patient is seated and the surgeon kneels beside him. With his left hand he grasps the arm of the patient just above the elbow. The patient's forearm being flexed to a right angle, the surgeon firmly seizes the wrist with his right hand. Then adducting the elbow to the body he utilizes the lever furnished by the forearm and rotates the arm out until firm resistance is met (practically until the forearm makes an angle of ninety degrees with the antero-posterior plane of the body). Now, with the arm still strongly rotated out, he brings the elbow forward and upward in the sagittal plane across the chest, and finally rotates the arm in, and places the patient's hand on, his opposite shoulder.

This procedure I would amend by placing the patient squarely on his back, with both shoulders resting on a firm table, and as there is a great tendency for him to turn his body to the affected side during the external rotation of the arm, I think it well that the opposite shoulder be held down. This may be done by a bystander. It is well, also, that downward traction[1] be added to adduction of the elbow in the first movement.

The manipulation is shown in Figs. 1, 2, 3, and 4. I am indebted to Dr. C. C. Page, assistant at the Chambers Street Hospital, and to my pupil, Mr. T. B. Enders, for their kind assistance in the matter of the illustrations.

The following case will serve as an example: A muscular porter, aged twenty-six, presented himself at the Chambers Street Hospital with the history of having fallen forcibly on the external aspect of the right shoulder twenty minutes previously, the arm being at the time of injury abducted to about seventy-five degrees.

Examination revealed a typical subcoracoid dislocation of the right arm. There was the usual prominence of the acromion with a hollow beneath it, the head of the humerus was both seen and felt beneath the coracoid process of the scapula. The elbow was abducted thirty degrees from the body. The affected arm was about one-eighth of an inch shorter than its fellow. No fracture could be detected. The patient having well relaxed his muscles, Kocher's procedure was employed as above described. As the arm underwent external rotation the contour of the shoulder became fuller, and at the beginning of the third movement (sweeping the elbow forward across the chest with the arm still in external rotation—Fig. 3) a distinct crackling sound was heard and the head easily slipped into the glenoid fossa. The patient said that he experienced very little pain. The crackling sound, of which mention is made, is very often heard as the head goes back. It has been thought by some writers to be due to a progressive laceration of the capsule, but this I think incorrect, for it does not occur while the capsule is at its greatest tension. I think it simply bony crepitation produced by the slipping of the head of the humerus across the anterior margin of the glenoid fossa.

In a later article[2] Professor Kocher lays additional stress on the importance of the coraco-humeral ligament, and, likening it to the ilio-femoral ligament of the hip-joint, says that the subcoracoid dislocation at the shoulder corresponds to the obturator dislocation at the hip.

In a minute description of the coraco-humeral ligament he says that it assumes the form of an inverted Y, the outer limb of which is a strong, tense band of fibres passing between the upper part of the glenoid fossa and the greater tuberosity. (It has heretofore been confounded with the tendon of the supraspinatus, which stretches

[1] Read before the Medical Society of the State of New York, at its Eighty-third Annual Meeting, February 6, 1889.

[2] This procedure Kocher mo estly calls a modification of Schinzinger's, but it differs in a most important particular. The first two movements are alike in both, but at the end of external rotation (second movement) Schinzinger has an assistant draw the head of the bone into its place by means of a fillet, or he grasps and forcibly presses it outward.

[1] Jersey: New York Medical Journal, September, 1883.

[2] Volkmann's Sammlung klinischer Vorträge Chirurgie, 1–28.

across this part of the capsule.) The tension of this outer limb "wedges in" the head of the humerus beneath the coracoid process. The other part of the Y runs to the lesser tuberosity and the adjacent capsule. Fibres pass between them which correspond to the zona orbicularis at the hip.

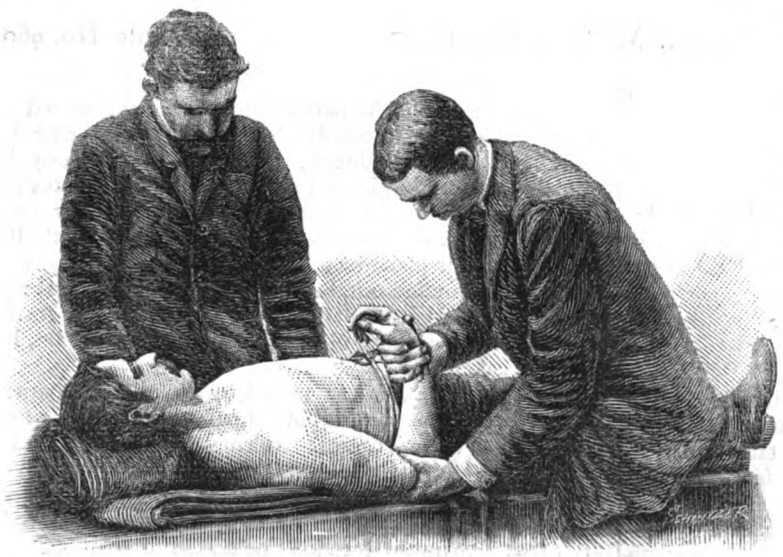

FIG. 1.—First Movement. The elbow is adducted to the body and drawn downward. (The arm and wrist should be firmly grasped, as shown in the figure.)

The internal limb is the stronger, and limits external rotation.

Professor Kocher says that when the coraco-humeral ligament is ruptured, or the anterior portion of the capsule severely torn, the procedure fails because the humerus loses the fixed point about which it should revolve.

Farabœuf,[1] however, has come to a conclusion diametrically the opposite of this. He proved upon the cadaver, and showed to the Surgical Society of Paris, that though all of the anterior ligaments be cut the procedure succeeds; but when the posterior portion of the capsule is divided the head simply revolves in external rotation but fails to enter its normal cavity. He contends that the success of Kocher's procedure is due to the integrity of the posterior portion of the capsule. That when the first movement, or adduction, is made, this portion is made tense. That in the second movement the head is turned outward around the lower fixed point of the ligament, and in the third movement it simply undergoes an external excursion through the rent at the inner part of the capsule and into the glenoid cavity.

Through the courtesy and with the assistance of Dr. George B. Phelps, Jr., Demonstrator of Anatomy at the Woman's Medical College, experiments were made upon the cadaver, with a view to proving the correctness of one or the other of these assertions.

Upon one shoulder we divided subcutaneously the capsule at its inner and lower part, and threw the head of the humerus beneath the coracoid process. Kocher's procedure easily replaced it. We then cut the coraco-humeral ligament and the anterior part of the capsule, but employment of the procedure was equally successful in reducing the dislocation. Upon another shoulder the posterior part of the capsule was divided, after the head of the bone had been dislocated forward, yet it was replaced by Kocher's manœuvre as easily as were the others. It was only after the capsule had been almost completely divided that external rotation failed to meet with resistance.

Through lack of time but few experiments were made, and their results are unsatisfactory and inconclusive. I hope in the near future to make an additional communication upon this interesting point.

In the article above referred to in "Volkmann's Sammlung," Professor Kocher states that since his original paper he has adopted the procedure in thirteen cases, in eleven of which reduction was easily effected and without the aid of an anæsthetic. In a still later article [1] he places added emphasis on the value of the manipulation, and avers that it is applicable to old cases as well as to those of recent date. In the original paper he contended that it was inapplicable to the intracoracoid cases (the subclavicular of English writers); but he now states that it does succeed in these if the elbow be adducted in the posterior axillary line during the first movement.

Ceppi [2] concludes that all known methods for the reduction of this luxation are inferior to that of Professor Kocher, and in a later article [3] says that further experience only strengthens this opinion.

Kaufmann [4] says that when correctly applied the method is always successful, and that without the aid of an anæsthetic. He cites eleven cases reduced by him.

Carafi [5] says, "thanks to the method of Kocher, the reduction of recent subcoracoid dislocations is now one of the simplest procedures in practical surgery." He had used it with success in twenty cases, and recommends that in the subclavicular cases the arm be held for two or three moments in the position of external rotation.

Davezac [6] employed it with success in several instances and recommends that it be applied to every recent case.

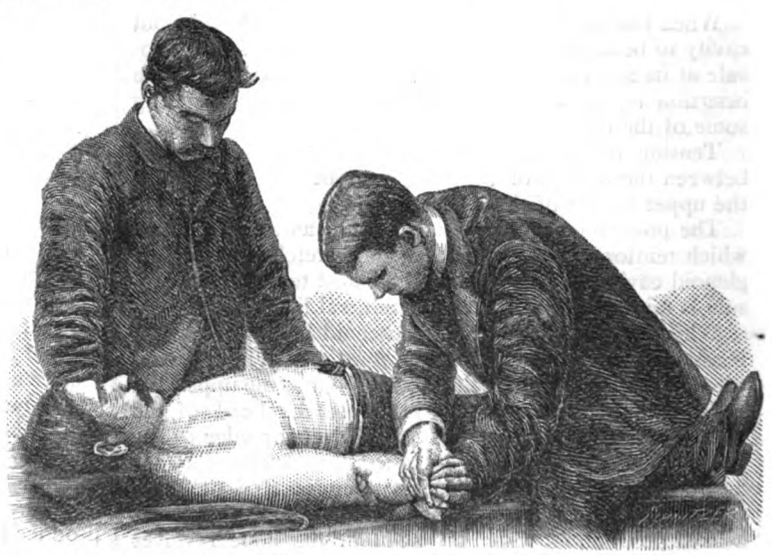

FIG. 2.—Second Movement. The arm is rotated out until firm resistance is met. (Practically until the long axis of the forearm points directly outward.)

Poinsot,[7] Perrier,[8] and Ferron,[9] strongly endorse the method, but add nothing of moment.

Mr. C. Heath [10] relates five cases occurring in his ser-

[1] Bulletins et Mémoires de la Société de Chirurgie de Paris, 1885.

[1] Transactions of the International Medical Congress, vol. ii., 1881.
[2] De la réduction des luxations sous-coracoidiennes, traumatiques, simples et récentes. Paris, 1878.
[3] Revue de Chirurgie, 1882, No. 10.
[4] Centralblatt für Chirurgie, 1881, No. 30.
[5] Revue de Chirurgie, 1881.
[6] Journal de Médecine de Bordeaux, No. 32, p. 351.
[7] Traité des Fractures et Luxations d'Hamilton.
[8] Thèse de Paris, 1884.
[9] Recueil de Médecine et de Chirurgie militaires, 1885.
[10] Lancet, April 14, 1883, p. 634.

vice at the University College Hospital, in three of which the bone was replaced at the first attempt and without ether. while, in the other two an anæsthetic was given.

Mr. Pick[1] considers the plan the simplest for the reduction of shoulder dislocations, but incorrectly states that it is applicable to the subglenoid variety as well as to the subcoracoid.

All writers agree that the procedure fails when the capsule is severely torn, and in support of this permit me to cite to you the following case :

A muscular man, twenty-eight years of age, sought treatment at the Chambers Street Hospital, January 28, 1889, with a history of having recently had the left shoulder caught between an elevator and a beam, and subjected to severe pressure, the arm at the time being abducted. The shoulder was the seat of a typical subcoracoid dislocation. Kocher's method was tried, but was unsuccessful. During the second movement (external rotation) no resistance was met. The method also failed under ether, and the arm was replaced by direct traction at a right angle.

The lack of resistance during external rotation seems very good evidence of severe injury to the capsule.

Its Employment at the Chambers Street Hospital, New York.—Early in 1883 a description of the method came under the notice of Dr. William T. Bull the Attending Surgeon to the Hospital, and under his direction its employment was begun. The first case was that of a man, seventy years of age, who presented himself at the hospital March 3, 1883. His subcoracoid humerus was so quickly and easily replaced in its normal cavity that surprise and delight found place in the minds of all who observed the procedure. Since then the method has been used to the exclusion of all others. The results in the first six months were published by Dr. Charles A. Jersey, in the *New York Medical Journal* for September 23, 1883, in an article entitled, "Twenty-one Cases of Subcoracoid Dislocation of the Humerus reduced by Kocher's Method." In seventeen of the twenty-one cases the reduction was effected at the first attempt, in the other four the bone went back at the second, third, fourth, or fifth attempt, respectively. In none was an anæsthetic used.

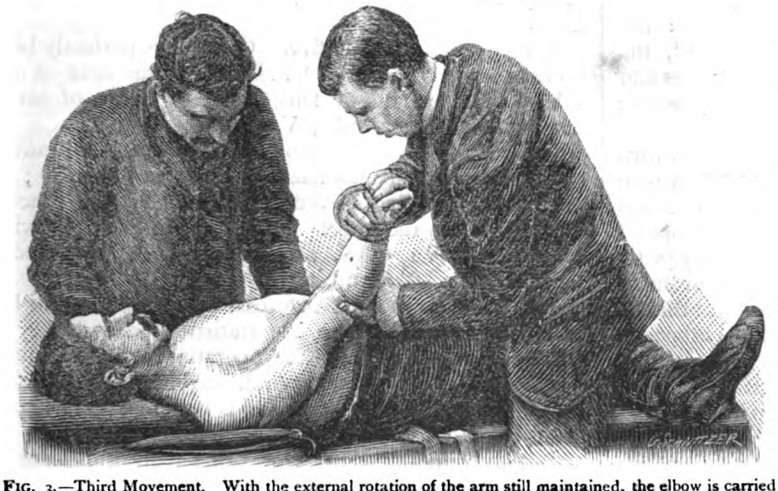

FIG. 3.—Third Movement. With the external rotation of the arm still maintained, the elbow is carried forward and upward on the chest.

During the five years ending with October 1, 1888 (the five years following the publication of Jersey's paper), 173 recorded cases of recently dislocated humerus find place in the history books of the Chambers Street Hospital. Of these, 44 were subglenoid and 129 subcoracoid.

[1] Fractures and Dislocations p. 375.

The results of treatment in the subcoracoid cases are as follows :

Without ether, Kocher's manipulation, successful at first attempt	98
Without ether, Kocher's manipulation, successful at second attempt	6
Without ether, Kocher's manipulation, successful at third attempt	8
Without ether, Kocher's manipulation, successful at fourth attempt	1
Failed without ether, with ether successful at first attempt	6
" " " traction at a right angle, successful	5
" " " foot in axilla, successful	1
" " " the head undergoing extreme external rotation [1] slips into axilla and is then reduced as axillary	1
Kocher not tried, success by traction at a right angle	3
	129

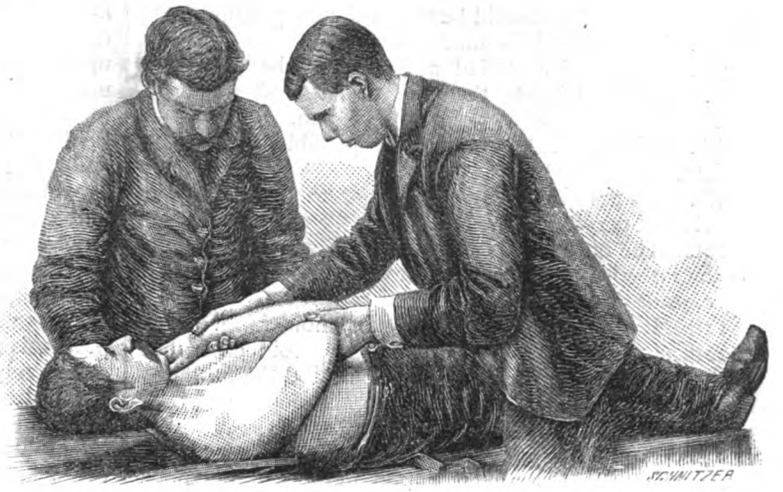

FIG. 4.—Fourth Movement. The hand is placed on the sound shoulder.

We thus see that of the 126 cases in which the procedure was resorted to it was successful in 98 cases, or 77 + per cent., at the first attempt, and that without the aid of an anæsthetic. Let us, however, make due allowance for the fact that these dislocations were reduced by some twenty-five different gentlemen, each of whom numbered in this list his "first case," on which, perhaps, he failed at first attempt.

Let us assume, moreover, that the list is not entirely free from diagnostic errors, and that more than one case which is classed as subcoracoid, was, in reality, an axillary luxation.

From the personal reduction of a not inconsiderable number of these cases, and the observation of many more, I am fully prepared to share the opinion of the authors to whom I have referred, that "in a recent simple case, the manipulation should prove successful at the first attempt, without anæsthesia."

In none of these cases was an injury inflicted on the axillary vessels or nerves.

Recital of them would be devoid of interest. Most of them occurred in muscular laborers;[2] many of the patients presented themselves in a state of intoxication, and either strenuously resisted manipulation, or absolutely refused it without the influence of an anæsthetic. These considerations aid in accounting for the "first-attempt" failures, for those cases in which ether was given.

Causes of Failure.—1. Muscular rigidity. 2. Extensively torn capsule. 3. Fracture complicating the dislo-

[1] Doubtless a case in which the capsule was severely torn.

[2] It seems unnecessary to call attention to the patent fact, that before attempting the reduction of any dislocation the patient's muscles should be thoroughly relaxed. In ignorant or frightened subjects this is often difficult of attainment.

cation. 4. Error in diagnosis. 5. Failure to properly adduct the elbow, or to sufficiently rotate the arm out. 6. Inward rotation of the arm before completion of the third movement. 7. Dislocation of such long standing that adhesions have formed about the head and neck of the bone.

Conclusions.—1st. Of the various luxations which the humerus undergoes the subcoracoid is much the most common.

2d. The method to be employed in its reduction is, *par excellence*, that of Kocher, and it should be used in every recent case.

3d. The procedure is logical and safe. It may easily and rapidly be carried out. Its careful, accurate, and thorough employment will almost invariably assure success at the first attempt.

4th. It will not succeed in those cases, happily uncommon, in which the capsular ligament is severely torn.

5th. The patient should be in the dorsal position.

6th. An anæsthetic is unnecessary.

7th. The aid of a skilled assistant may be dispensed with. It is advisable that the opposite shoulder be steadied, but this can be done by a layman.

8th. It is attended with the least possible pain to the patient.

9th. It is practically without danger to the important vessels and nerves.

10th. The question as to whether its success depends on the integrity of the anterior or of the posterior part of the capsule must yet be considered *sub judice*.

11th. It rarely succeeds in the subglenoid form.

12th. It is applicable to the intracoracoid cases, but in those the elbow should be placed behind the posterior axillary line (Kocher) and external rotation should be maintained for two or three minutes (Carafi).

13th. In all cases in which much resistance is met with during the early part of the second movement the position of external rotation should be steadily maintained for a short period before bringing the arm forward and across the chest.

18 East Twenty-fourth Street.

CONSIDERATIONS CONCERNING EXTRACTION OF HARD CATARACT, WITH AN ANALYSIS OF THREE HUNDRED AND NINE CASES.

By HENRY D. NOYES, M.D.,

NEW YORK.

The topics to be considered in this paper relate to: 1st, the suitableness of a cataract for operation; 2d, the method of operating, with its attendant performances and possible accidents; 3d, the events of the healing process; 4th, the visual results; 5th, secondary operations.

The opinions and deductions are founded upon my own experience, while the statistics presented are partly my own and partly those of my colleagues in the New York Eye and Ear Infirmary. I have chosen to gather the results of operations by several surgeons, in order to present what may justly be assumed to be the work of those who have the ordinary and competent degree of experience and skill. In this regard, it appears to me, carefully analyzed results have special value, as showing what is attainable by an average measure of trained ability, conceding, of course, that the highest possible skill could reach results of better quality. Moreover, the results in a public institution, whose arrangements and construction are not what the strict demands of hygiene, as now understood, call for, must, of course, be inferior to what would be attainable under more perfect discipline, management, and construction, especially when a hospital is under control of a single intelligent head. It is premised that among the eight operators whose work upon 309 cases, between October, 1884, and January, 1889, is presented, none are included who have contributed less than twenty operations, which is about one-fifteenth of the whole, and the highest contribution of a single operator is one-fourth of the whole.

1st. What constitutes the fitness of a cataract for operation is not yet fully agreed upon. It is widely held and taught that so long as any sight remains no operation should be done. In a general way this is true. But I wish to call attention to certain cases to which this rule does not apply. They are those in which the hardening or sclerosis of the lens extends beyond the middle parts, or so-called nucleus, to the cortical layers, and these do not suffer the fissuring and disintegration which constitute ordinary cortical opacity. Instead of the white and striated look of ordinary cataracts, such lenses appear dull, smoky, deeply yellow; when of very long duration, say six or more years, they become reddish by reflected light, and even black. Vision is greatly impaired, yet it may be possible to count fingers at three or six feet distance. By the ophthalmoscope one may even see the optic nerve. The special feature is that there is evidently a most irregular type of refraction in the lens; the same kind which is familiar in conical cornea, or with diffused opacity of the cornea. The retinal vessels, if seen by the upright image, are twisted and undergo great distortions upon parallactic movements. Viewed from the distance of a foot, and by moderate illumination, the irregular shadows flitting across the pupil, and the twisted cycloidal and spiral movements of the vessels clearly point out the irregular refractive quality of the lens and explain the impaired sight. Such eyes may have become myopic in the strict sense. There may be narrow striæ running down from the margin of the lens, but there will be little disorganization of the superficial layers. These lenses pass through their changes very slowly, and many times is an error made in prognosis as to the period when sight will be wholly lost.

I merely allude here to the myopia of senile cataract, which depends chiefly on increase in the refracting index of the lens. When a certain degree is attained, it may for a long time stand with little change, or may end in cortical opacification and complete blindness. I have seen such myopia amounting to 3 and even 5 dioptrics; lower degrees of 1 D and 2 D are common. These are the cases of so-called "second sight."

The practical point respecting the cataracts now referred to is that they should not be refused an operation on the ground of their immaturity. I can from personal experience cite many instances to justify this dictum.

M. J. S——, aged forty-eight, Middletown, N. Y. O. D. lens deep red, posterior polar opacity, and numerous molecules and no striæ; V= fingers at one foot. In O. S. appearances less intense, but similar; counts fingers at five feet.

J. P——, aged eighty-five. O. D. lens perfectly black, no reflex from fundus. O. S. has three fine striæ on nasal side, diffuse haziness of lens, a silvery lustre of surface coming from the capsule; V= 5 $\frac{8}{10}$.

C. F. Y——, aged fifty-one. O. D. lens semitransparent, fine striæ, molecular haziness, no cortical opacity; V= fingers at five feet. Seven months later, appearance of lens and vision the same. Extraction followed by vision =1, or $\frac{20}{20}$. In O. S. same appearance; operated on seven months after, and in that ultimately V= $\frac{20}{20}$.

It is needless to cite many cases; nor have pains been taken to indicate them in the statistics, because they are usually set down as unfit for operation. But in my experience this opinion is unsound, because a perfect separation of the lens from its capsule is possible, and the pupil is easily rendered clear at the operation.

Wholly different is the aspect of a truly immature cataract whose cortical layers have begun to disintegrate with the shrinking of the nucleus. Broad striæ, a deeper opacity, with intervening clear spaces, denote important differences. To this class the operation of massage of the lens, with iridectomy (Förster), and sometimes without iridectomy (Pooley), is in general acceptance. This was done in 34 out of the 309 cases, or in about ten per cent. It is employed when useful vision has ceased, to avoid a long delay in the natural maturity of the lens.

To some cases this proceeding is inapplicable, and it is important to signalize them. First are the sclerosed

lenses above referred to; 2d, posterior polar cataract which usually accompanies choroidal disease; 3d, cataract in myopia; 4th, laminated cataract (congenital). In general it is not suited to cases where the lens is disposed to induration and where the cortical layers have not already shown signs of disintegration. The practice of some is to needle the lens to hasten maturity, but this involves risk more serious than does massage. The effect of Förster's operation on the subsequent operation and during the healing will be hereafter referred to.

It is important to remember that the lens in very old persons is always large, and grows larger with age. We owe this fact to the studies of Mr. Priestley Smith, and of course sclerosed lenses are large. There may be a small cornea, or by a broad arcus senilis it may seem small in diameter, while the lens will be 8 mm. in diameter. It is unnecessary to refer to hypermature cataracts, except that it is difficult sometimes to extract the nucleus because it is small, and also that hypermature cataracts will permit removal in the capsule not infrequently, because the anterior part of the vitreous is also likely to be fluid the capsule will separate from it, and the suspensory ligament will be weak and easily rupture.

2d. The operation chiefly practised is one called by Graefe's name, but which really is a peripheral section at the upper margin of the cornea, with iridectomy, which by some is made broad and by others is made narrow; my own preference is for the latter. Since 1884 cocaine has become the approved anæsthetic, while ether and chloroform are reserved for timorous and unruly patients, or for cases of special difficulty. It will be found that a large proportion of the failures and of the defective medium results, are among those who take ether. While cocaine has vindicated the high expectation in eye surgery with which it was greeted, it has certain disadvantages. It desiccates the cornea and makes the epithelium easily rubbed off. Used in very strong—say ten per cent. solution—it is capable of making it deeply hazy. It need not be used in more than two per cent., or at most four per cent. solution once, or at most twice, with an interval of fifteen minutes before the operation. A second disadvantage is, that it causes diminution of tension. This is seldom carried so far as to be troublesome, yet it has been to me the cause a few times of difficulty in making the section, because of deficient resistance. I have even seen the cornea dimple under the point of a sharp knife. In cases of plus tension its effects are difficult to be procured.

The practice of washing the eye with antiseptic fluids has become habitual. The usual fluids have been boric acid, four per cent. corrosive sublimate, 1 : 5,000, and biniodide of mercury (Panas' solution), 1 : 20,000. None of these are truly antiseptic, yet they aid in removing mucoid secretion from the conjunctiva, and are of special value for ridding the eye of blood and getting out cortical matter. A bulb of one ounce and a half capacity, with a hard-rubber nozzle one and a half inch long, is satisfactory. It is to be stated that solution of corrosive sublimate will, if the corneal epithelium be desiccated by cocaine, cause an opacity which may be serious. The choice between one form of fluid or another is not easy to decide. The majority of cases have been irrigated with corrosive sublimate, yet results equally good have followed boric acid, so far as could be determined. It seems true that, while cleansing of the skin of the lids and of the tarsal edges and of the conjunctival sac by a simple aseptic fluid has advantages, these proceedings give no absolute guarantee against suppuration. Instruments are carefully rendered innocuous by immersion in carbolic acid five per cent., and then dipped in alcohol; the hands of all concerned are scrubbed with soap, and the nails cleansed by a brush, assisted by free use of powdered borax.

An important feature of operations is the use of the bulb to wash out of the wound and of the anterior chamber, blood and the débris of the cataract, besides helping to force the iris back to position. It is not needful to put the point of a syringe inside the eye, the stream is large enough and forcible enough to find its way within. The fluid should be lukewarm, and all those above mentioned seem to answer well without irritating the iris. The mercurial salts have the advantage of coagulating the cortex and making it more visible. The use of eserine, either on the dressing, mixed with vaseline, or in solution in the eye, has been frequent, and seems to be useful. On the other hand, some operators have used atropine in strong solution, gr. xvi. ad oz. j. The choice of agents depends, it seems to me, on the presence of retained cortex, which indicates a mydriatic; while a normal operation, a disposition to prolapse of iris, or the loss of vitreous indicates eserine. The latter is certainly demanded when no iridectomy has been done. The method of opening the capsule has been various; sometimes peripheral, usually central, and with the design of making a thorough laceration. The prevention of its entanglement in the wound is highly important, and is favored by irrigation with the bulb.

The size of the corneal wound is a prime factor in the proceeding. For myself, after some disagreeable experiences, this error no longer happens. I have no hesitation in making it two-fifths of the corneal circumference, although this measure is seldom fully reached. It is extremely difficult to measure exactly the size of the wound. If one follow diagrams, the wound is almost certain to be too small. The depth of the anterior chamber and the diameter of the cornea cause serious differences, because a single millimetre is greatly important. What results from a scanty wound may be noted in the disposition to loss of vitreous, with consequent necessity, in some instances, of introducing delivering instruments, or in the resort to a hook or spoon, even without loss of vitreous. Better is it to enlarge a wound with scissors, than to attempt to force a lens through an opening too small. Iridocyclitis, even suppuration, wait on such mistakes.

Hemorrhage is always annoying, and may be extremely troublesome. It not only may make the operation difficult, but often involves bruising the eye to secure a clear pupil. It comes from wounding the conjunctiva, or from the limbus, and especially from the iris. It is favored by a state of reduced tension, but it especially indicates degeneration of vessels. Under ether we are especially liable to be annoyed by it. I have noted that it often precedes severe iritis and favors thickening of the capsule. Irrigation, actively kept up, is the best means of removing it. It is far better than massage. In case the counter-puncture falls behind the limbus we are liable to hemorrhage, and we always incur another difficulty in the irregular contour which the wound is pretty sure to have, and to it can be attributed some cases of iridocyclitis. In a number of cases the iris has fallen over the knife before completion of the wound. This accident happens more frequently to certain operators. It is, in some measure, due to the resistance of the patient, and to the subtension of the globe. Its effect is not by any means so detrimental as is that of an inadequate wound, yet it implies violence, and is to be deprecated.

Escape of vitreous is the danger most earnestly striven against. It happens at any stage of the proceeding, but is most frequent when the lens is being expelled. If the operator have luxated the lens in using the cystitome, he must be wary of it. Either his hand has been too heavy or the vitreous is fluid in its anterior portion. Loss of vitreous before the lens is out is most untimely, and necessitates the introduction of an instrument for delivery. It is often the patient who is to be blamed for the accident, especially after delivery of the lens, and its prevention will test the tact, temper and patience of the operator like nothing else in surgery.

The importance of the occurrence is shown in the following figures: Among 21 failures, loss of vitreous happened 9 times; among 31 cases giving only moderate visual results, in which surgical faults were committed, loss of vitreous occurred 7 times. That is, in 52 imperfect cases 16 times did this accident happen. On the

other hand, this accident took place among 245 successful cases 33 times. In other words, the chance of escaping ill-effects was about 2 to 1, and the mishap occurred in about 16 per cent. of all the operations. The question whether it happens more or less frequently under general anæsthesia has not been examined. Not infrequently the lens emerges with the vitreous, in other cases it sinks out of sight. Prognosis is better if the vitreous is fluid, than if it be normal in structure.

Entanglement of the iris or of the torn capsule in the wound is a recognized and serious error. It can be avoided by irrigation and by passing the spatula gently along the angles of the wound. In case the tension of the globe is supranormal, even after the lens is out, there is decided liability to iris prolapse. We by no means guarantee exemption from this mishap by iridectomy. On the contrary, very numerous cases attest the occurrence of incarceration of the pillars of the coloboma, and cystoid cicatrices testify to its existence. To the operator this may remain unknown for many days, and it happens both early and late in the healing process as well as at the time of operating.

Out of 309 cases which form our present material, iridectomy was done 274 times. In 35 cases no iridectomy was done, and this is sometimes called simple extraction. These operations were nearly all done by two operators. Although the number is very small, it is proper to give the peculiarities and results of the method.

The incision must always be of full proportions. I have made it at least two-fifths the circumference of the cornea, and it should lie in the limbus, not at all in the sclera. It is placed more peripherally than the old flap extraction, and practically in the same region which is usually chosen in the so-called Graefe's method as now done. Division of the capsule is necessarily central, because the pupil is never dilated intentionally. Expulsion is more difficult than with iridectomy, and requires pressure and counter-pressure, and the lens must make a nearly quarter revolution to enter the pupil and reach the wound. If the pupil be rigid, the attempt must be given up. Replacement of the iris may spontaneously occur, or be induced by irrigation, or effected by the spatula. The real difficulty lies in clearing the pupil of débris. Massage accomplishes much, but irrigation is decidedly the most effective, while introduction of curettes and spoons is to be deprecated. Cases with much soft cortex are undesirable, while the full, hard cataracts best lend themselves to this method. Most troublesome are the very small cataracts, say 5 mm. in diameter, which fortunately are rare. We meet them as nuclei of hypermature cataracts, and very seldom without this degeneration. After completing the operation eserine is to be used freely both by instillation, gr. ss. ad oz. j., and upon the pad, gr. j. ad. 3 j. vaseline. In the 35 cases vitreous was lost five times; in one instance with simultaneous expulsion of the lens. The accidents to the iris were prolapse in 6, and drawing up of the iris toward the wound in 5. The latter is a partial entanglement confined to the peripheral part, and in some instances may be due simply to exudation extending from the wound to the iris. In one case the iris was drawn up apparently behind the wound, as if it had adhered to the ciliary processes—a condition similar to what is sometimes seen after a blow. The lens was in this case extremely small and difficult of delivery; there occurred loss of vitreous and yet vision was $\frac{20}{18}$. The period when prolapse of iris was noted varied from the third to the seventh day. The eye was, in most cases, not opened until the third day, or even later, and it is impossible to say when the hernia occurred. Supranormal tension, which we sometimes find, favors prolapse, but it is clear to my mind that the primary factor is tardy union of the wound. If it had been contused by difficult delivery, by frequent introduction of instruments, if hemorrhage has been abundant, if vitreous has escaped, these circumstances hinder the quick and firm coaptation and healing. Research in cases of death soon after normal extraction of cataract shows that the epithelium dips down into the wound and constitutes a large element in the callus, as it may be called. Lymphoid cells are seen gathering in great numbers from the corneal substance; but epithelium has far more to do in the new tissue than has been supposed. See my case published in "Transactions of the American Ophthalmological Society," 1887, and Becker's cases, especially Taf. xxx., Fig. 2, "Atlas der Patholog. Topographie des Augues," 1874, where the early healing of the wound is shown to occur principally from the outside. Now the pressure of any foreign matter, like clot or lens substance, keeps the wound apart on its inside lip, and restlessness of the eyeball will tend to favor yielding of the cut. Add to this swelling of the corneal tissue adjacent to the wound, and the preparatory arrangements are fully realized, for entrance of the iris. This in my case of death with autopsy of the eye occurred in spite of a normal operation and normal healing process; and being a Graefe's operation with iridectomy, it might not have been noted but for the early death and examination. As a fact, intrusion and entrapping of the iris in the wound has been a frequent occurrence in extraction with iridectomy, taking place at the pillars of the coloboma, and causing many serious complications. It is my conviction that the relative proportion of prolapse of iris in extraction with iridectomy, and without iridectomy, would be found only slightly larger in the latter case if the operations in both were done with especial smoothness and exactness. It is, however, true that for simple extraction the wound must be ample, exact, correctly placed, and regular, and there must be the minimum of exposure and manipulation of the eye. All these conditions imply highly developed technical skill in the operator, and docility in the patient.

It will be noted that there were no failures in the 35 simple extractions; and as to visual results successful cases were 27; medium, 7; unknown, 1. The visual acuity does not exceed the average of the cases with iridectomy, and this result accords with the observations of others.

The incidents of the cases where the lens had been ripened by doing Förster's operation, *i.e.*, iridectomy, with concurrent massage of the lens, deserve to be considered. There were 34; of which successes, 24; medium vision, 7; failure, 3. Extraction is reduced to extreme simplicity; yet that the dangers in the operation are considerable appears from the frequency of loss of vitreous, viz., 10 times, and in four instances instruments were needed for delivery. The date of the first operation varied between one week and eight months. In all cases considerable cortex is encountered, and vitreous prolapse is frequently met with in getting this out. Often the patient, who on a previous occasion has behaved well, now loses self-control. In 8 cases iritis occurred, and in 4 of them it was slight. Certainly the tendency to iritis is important. Failures occurred 3 times, once by iridocyclitis after spontaneous extrusion of lens and vitreous; in another case by secondary hemorrhage after loss of vitreous (the eye was myopic); in the third case no account is given of the reason for failure.

3d. The incidents of the healing process. In the cases of failure, which were 21, they may be grouped into: infection of the wound, 9 times; severe iritis and iridocyclitis, 10 times; vitreous in wound, 1; hemorrhage, 1. One patient is said to be corpulent, which is unfavorable; one is marasmic; another a drunkard; one eye had pterygium; another had chronic conjunctivitis. As already said, in 7 cases loss of vitreous attended the operation. The actual cautery is of no avail when infiltration has passed much beyond the wound, and drawing out the exudation cannot always be effected.

4th. In cases with medium results, which were 43 in all, the defective vision was due in 14 to faults in the eye existing prior to the operation, such as maculæ corneæ, 5; atrophy of choroid, 5; atrophy of optic nerve, 2; detachment of the retina, 1; pterygium, 1; = 14. The cases

surgically faulty exhibited infiltration of the cornea, 8; hypopyon, 1; iritis, 8; slow union of the wound, 1; thickening of the capsule, 10.

Among the 245 successful cases, 117 had to contend with irregularities in the operation, viz., loss of vitreous, 33; severe hemorrhage, 35; unintentional cutting the iris during section, 20; scanty wound, 13; the use of instruments to deliver the lens, 14; injury of the eye during the healing, 2.

Infiltration of the wound happened in 3; hypopyon, 2; severe iritis, 9; opacity of cornea, 5; reopening of the wound, 5. For purulent infection of the cornea the galvano-cautery was used, and in one case three times. Opacity of the cornea was due in some degree to the usual traumatic keratitis, but it was likewise produced by the corrosive sublimate even when only 1 : 5,000, and to this result I have no doubt cocaine contributed. Reopening of the wound is due largely to enfeebled condition of the patient, and is to be met by stimulus and feeding and pressure bandage. In all the cases of reaction the regular treatment is prolonged use of hot water, atropine, washing out the eye if secretion exists, leeches, quinine, alcoholic stimulus in those whose feebleness or previous indulgences demand it. In a few instances—not more than four or five—the lids were closed by plasters; in all the others a bandage was employed and not removed until the third, or the fifth, or the seventh day. Confinement to bed was from two to ten days, or perhaps more. Practice in this regard is various. One notable case was a patient of mine who had lost one eye by an unsuccessful operation at the West. A solution of bichloride of mercury, 1 : 2,000, was used to wash the skin about the eyes, and 1 : 5,000 to the conjunctiva. In twelve hours he developed an intense erythema, simulating erysipelas; the bandage was removed, nothing but cold lotions applied, and the healing of the eye was uneventful; he obtained vision $\frac{2}{4}\frac{0}{0}$.

5th. The number of secondary operations has not been calculated; of them the record is imperfect. It is to be mentioned that they are not always innocuous. They sometimes set up severe inflammation, viz., purulent iridophakitis. Why this should occur when a simple needle wound is made, and thorough disinfection practised, is not to be explained by introduction of germs from without. It must occur by exciting to activity germs already existing in a dormant state within the eye. Such surprises ensue in cases where severe reaction followed the original operation. They have occurred to me mostly where the capsule was both thickened and adherent. On the other hand, an iridotomy with Wecker's scissors or a knife, even when we are dealing with tissues deeply damaged by inflammation, is seldom followed by so great mischief. An iridectomy is rarely followed by harm. I have several times lost eyes by secondary needlings, while the more serious secondary operations are borne with much greater impunity.

In summing up the cases which have been utilized, the result of operations upon 309 cases was as follows:

Successes with vision $\frac{1}{10}$ and better	245, or 79 per cent.
" " " less than $\frac{1}{10}$	43, or 14 " "
Failures	21, or 7 " "
	309

If careful selection of cases had been made, the showing would have been much better; but while the surgical repute of the operators would have stood higher, the nobler attributes of the surgeon, who puts all his powers and capacities at the service of the distressed, would have been tarnished. There were eight operators, of whom five contribute 139 cases, with full success, 78 per cent.; partial success, 13 per cent.; failure, 9 per cent. Of three who contributed 172 cases, the results are: full success, 80 per cent.; partial success, 14.7 per cent.; failure, 5.3 per cent. The personal equation appears not so much in the proportion of full successes as in the category of partial successes and of failures. A very large portion of the patients were of the true pauper class, and many the victims of evil habits.

It must be added that two cases of sympathetic ophthalmia occurred among the 309, and two deaths took place, one from heart failure and one from general exhaustion.

The degree of vision in successful cases is shown in the accompanying table. In some instances secondary operations were done, but the proportion was less than one-third. In 21 cases no record of vision is given, but the results were known to be successful.

$\frac{20}{20}$	39 cases.
$\frac{20}{100}$	46 "
$\frac{20}{40}$	61 "
$\frac{20}{30}$	35 "
$\frac{20}{50}$	29 "
$\frac{20}{60}$	7 "
$\frac{20}{70}$	5 "
$\frac{20}{80}$	1 case
$\frac{20}{200}$	1 "
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THE DIAGNOSTIC SIGNIFICANCE OF TREMOR.[1]

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TREMOR may be general or local, that is, it may embrace the whole muscular system, as the mercurial tremor; or it may be confined to certain groups of muscles, as in atrophic affections; or be limited to a single member, as the tongue or lips. The distinction of convulsive and paralytic tremor is a very old one, running back, in fact, to the time of Galen. The former, which persists during repose, was supposed by Van Swieten to be due to an irritative lesion, while the latter, which is seen only on the occasion of voluntary movement, was attributed to a deficit of the normal stimulus. The older theory of Spring and others, that tremor was due to some alteration in the tissue and contractility of muscle, has been displaced and disproved by the experiments made some years ago by Charcot and Vulpian, which showed conclusively that, in most cases at least, tremor is due to central nervous influence. As Romberg puts it, tremor is the bridge which unites spasmodic and paralytic affections.

As we know, muscular contraction is brought about, not by a single stimulus, but by repeated, successive stimuli, the summation of these giving what is known as physiological tetanus. Now, to produce this condition it is necessary that these stimuli exceed thirty-two per second. When a normal muscle contracts these rapid stimuli run together, as it were, and give a steady movement, and the individual stimuli cannot be appreciated except by applying the stethoscope to a contracted muscle, when the humming bruit can be distinctly recognized. This principle is, of course, the well-known one of the rapid vibration, as of the waves of light or sound, giving a continuous picture or note. When a wheel is revolving rapidly we cannot discern the individual spokes, but as soon as the velocity falls below a certain number of revolutions they become visible; so, when the stimuli to a muscle fall below thirty-two, we begin to recognize each individual stimulus in its resulting contraction. Now, in such diseases as paralysis agitans, multiple sclerosis, mercurial tremor, and the like, the number of contractions—for, of course, tremor is nothing more than successive contractions and relaxations—has been shown by Brouardel, Marey, Gowers, and others, to reach only six or seven per second. So that in certain affections, where the conducting motor-tracts are affected, as, for example, in disseminated sclerosis, it becomes evident that the cortical motor discharge is not properly conducted—is interrupted in precisely the same way as an electric current might be. This same thing is well shown in the fibrillary con-

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tractions of many atrophic diseases, where certain parts of the same muscle, or one muscle in a group, will not receive its proper stimulus, and instead of the steady tonic condition, it is alternately contracting and relaxing. We should bear in mind, in considering the subject of tremor, the fact of muscle tonus. In certain affections there is seen a want of co-ordination, a destruction of equilibrium between antagonistic muscles, and as a result a tremor. While, as has been said, we may make a distinction between the convulsive and the paralytic tremor, as shown by the application of some stimulus such as an electric current, which exaggerates the former and diminishes the latter; still, in the great majority of cases, tremor is of paralytic origin. Before taking up the individual tremors, the following classification, which has been somewhat modified from that given in the excellent treatise of Axenfeld and Huchard, may make the subject clearer.

Tremors may be divided into the *acute*, embracing those produced by *a*, cold; *b*, fright, anger, or great emotion; *c*, adynamic fevers.

It will not be necessary to describe any of these acute forms, but they should be borne in mind in making a diagnosis. Nervous females, especially when being examined by a physician, show often in a marked degree this acute tremor. The *chronic* form includes: *a*, Cerebral or spinal lesions, such as primary lateral sclerosis, disseminated sclerosis, ataxic lateral sclerosis, post-hemiplegic affections, bulbar paralysis, general paralysis, myelitis, by compression especially, and certain forms of chronic meningitis; *b*, lesions of nerves and muscles, as neuritis and muscular atrophies; *c*, metallic poisons, as mercury, lead, arsenic, along with which may be classed the tremor of syphilis, alcohol, tea and coffee, and tobacco; *d*, certain affections, the pathology of which is not understood, paralysis agitans, hysteria, exophthalmic goitre, athetosis, senile and hereditary tremors, and a certain form described as simple tremor, and chorea. Of course a great number of these forms need not be discussed, and are mentioned only to make the list complete.

1. *Disseminated sclerosis.*— Of cerebro-spinal lesions, disseminated sclerosis, sclérose en plaques of the French writers, presents most prominently tremor as a marked and constant symptom. The first thing noticed in regard to the tremor of this affection is that it exists only upon some voluntary movement. If the patient be lying in bed no tremor whatever is observed. When sitting in a chair, tremor of the legs may be seen. Certain movements involving only very limited play of the muscles, as for example in buttoning the clothes, may be performed, and the attending tremor is not very marked—is fine. When, however, the movement requires more extensive exercise of the muscles, through a larger arc, then the tremor becomes very decided and characteristic. If the patient be required to raise a glass quite filled with water from the table to the lips, at first the tremor is rather slight, but as the effort is continued it becomes more and more intense. It is rhythmical in nature, the glass being moved toward the mouth and withdrawn in a regularly intermittent manner. The direction is not lost as in chorea, but the glass approaches nearer and nearer the lips, until finally it is struck violently against the teeth and the water spilled. When a patient in whom this disease is pronounced attempts to walk, the limbs, trunk, and head all partake of this tremor. It is true that certain cases have been observed in which the tremor persisted to some degree when the patient was at rest, but such cases are very rare, and can easily be explained by the very wide distribution of the pathological process in this disease. The tremor of disseminated sclerosis is usually an early symptom, though it occasionally appears after the disease has become established. Toward the termination of the malady the tremor often disappears almost entirely. The scanning speech will be noted farther on.

2. *General Paralysis.*—Here the tremor is confined in the early stages of the disease to the muscles of the face and the tongue. The tremor is not general, but limited to certain muscles or even to parts of a muscle, giving the well-known fibrillary tremor. This is well seen in the tongue, which has in addition a general tremulousness of its entire structure, so that its movements are very uncertain and inco-ordinate. In the latter stages of the disease there is a tremulousness attendant upon any movement, which is seen in the whole member moved, together with the rapid fibrillary twitching of portions of muscle. On the whole, the tremor of general paralysis is not specially characteristic, except so far as it affects the muscles of articulation. The difference between the tremulous, indistinct, uncertain utterances of a general paretic contrasts sharply with the regular, spaced, scanning speech of a patient with disseminated sclerosis. Of the other brain and cord lesions which may give rise to tremor, it is not necessary to speak specially. In none of them does the tremor exist as a characteristic and diagnostic symptom. The remarks apply to the various forms of neuritis and muscular atrophies, in which latter fibrillary tremor is well marked.

Turning now to certain affections the pathology of which is either unknown or inconstant, the one in which tremor is most characteristic is

3. *Paralysis agitans, or Parkinson's disease.*—Of all the diseases mentioned in the foregoing table this one presents the most marked, persistent, and diagnostic tremor. The tremor in this affection is fine, that is, the arc of movement is a short one. At first it is confined to one member, but as the disease advances it becomes more general. The movements are regular and more or less rapid, the favorite seat being the hand. Here the movement of the thumb against the other fingers has been compared to that observed in rolling a pencil between these fingers, or rolling pills. The handwriting, which in disseminated sclerosis is irregular and angular, and in general paralysis is distorted and full of omissions, in paralysis agitans is characterized by the lines being finely sinuous. In the earlier stages of the disease this is appreciable only by means of a lens. A distinguishing feature of the tremor in this affection is that it exists only during a state of repose. If a patient whose hand is continually agitated attempts to grasp some object, the tremor in large part disappears, or at least is not increased. While, as has been said, the tremor usually begins in one member, it may affect all four, or may take a hemiplegic form. A fact to be noted is that it spares the head.

4. *Senile tremor.*—Very closely connected with the last mentioned affection is the tremor often seen in advanced age. Its favorite seat, differing greatly in this respect from paralysis agitans, is the head and neck, giving rise to the frequently observed nodding motion. At first this tremor seems to be lessened when the parts affected are at rest, but later in the disease it becomes continuous and widespread. It is solely a disease of very advanced age, excepting of course certain cases which occur in persons who have all the evidences of extreme old age except the years. It varies in degree from that slight tremor and want of co-ordination which always accompanies a burden of years, to a more marked and continuous rhythmical tremor, resembling paralysis agitans in almost every respect save that in that disease the head is free.

5. *Exophthalmic goitre*, or Basedow's disease, presents a very characteristic tremor, which was noted only a few years ago and has since been carefully studied by Marie. It is a fine tremor, a vibration, which affects not one member, but the whole body. If the patient is erect, by placing the hands on the shoulders or the head this vibration is quite perceptible. The tremor varies considerably in different cases, but is nearly always present if carefully looked for, and is often a very prominent feature.

6. *Choreiform movements.*—In ordinary chorea vulgaris there is no defined tremor. The movements are extremely irregular, persisting during rest, and very greatly exaggerated in voluntary movement. In striking contrast with disseminated sclerosis, the choreic patient in attempt-

ing to put a glass of water to the lips makes a number of wild, irregular movements, without the slow advance to the end aimed at in the other disease. In many cases, however, chorea assumes a rhythmic form, and then is apt to be confounded with other forms of tremor. Still, close attention to the irregularities of the intentional movements, as well as the fact that the tremor, or more exactly the spasmodic movement, exists during rest, will lead to a correct diagnosis. Some of the uncommon forms of chorea, such as the hereditary form described by Huntingdon, and the various pre- and post-hemiplegic forms, present a more distinct trembling. To the same category belongs athetosis, where the constant polyp-like movements are limited to the fingers and toes.

7. *Hysterical tremor.*—The movements observed in hysteria are as various and simulating as the other symptoms of this disease. The tremor may be limited to one side, hemiplegic in form, or may be general. It may consist of a fine tremor, continuous but much increased by movements, or it may show a violent convulsive discharge. A characteristic feature of the tremor is its irregularity. For a time the movements may go on with almost the regular rhythm of paralysis agitans, when suddenly they will be replaced by violent convulsive movements. There is at present under my care a young woman who presents a most marked hysterical tremor. All four limbs are agitated by a tremor of rather wide range, coarser than that of paralysis agitans, and rather more rapid. Any excitement, or any movement will intensify greatly the tremor. If she attempts to put her feet to the ground at once the regular movement is transformed into a very violent convulsive form, almost resembling spinal epilepsy. Choreiform movements are often met with in hysteria, and should not be confounded with that disease.

8. There is a curious and rare form of tremor which, for want of a better name, or because it is the sole symptom, is known as *simple tremor*. It affects young or middle-aged persons and is generally confined to the hands, lips, or tongue. Usually it ceases during rest and is aggravated during movement, though to a considerable extent under control of the will. It is a fine tremor, and rather rapid. A number of cases of this simple or nervous tremor have been described, showing a marked hereditary tendency. It has no special ill effects on the health of the person affected, but is very resistant to any form of treatment, and often continues during life.

9. One of the prominent symptoms of chronic poisoning by certain metals is tremor. Of the metals occasioning such tremor, the most notable is mercury. Poisoning by this substance is met with occasionally after long-continued therapeutic administration, either taken internally, by inunction, and especially by the vapor bath, but most frequently among artisans who use the metal or who prepare it for commerce. The tremor usually commences in the face or arms, and gradually invades the trunk and lower extremities. At first it is present only on voluntary movement, but soon persists during repose, and in extreme cases even during sleep. It resembles the tremor of disseminated sclerosis, though less extended. Generally, the character of the tremor would be represented by a mean between disseminated sclerosis and paralysis agitans. As the disease advances the tremor becomes more violent and convulsive. In chronic lead poisoning tremor is an inconstant symptom, generally limited to the face or hands. It is a fine tremor, resembling senile tremor, and is worse after exertion, when the muscles are exhausted. Slight tremors are sometimes observed in cases of chronic poisoning by other metals, but they are not worthy of special mention.

10. *Alcoholic tremor* is met with, as has been said, in acute alcoholism. In this case it presents the form of a moderately fine tremor, most marked in the face and hands, but seen also in the lower extremities. It is exaggerated on movement, becoming faint or entirely disappearing if the patient can be quiet. A distinctive feature of the tremor of acute alcoholism is its tendency to become general, so that when the hand is placed on any part of the patient, a trembling can be felt which runs through the whole body. Very often, in fact almost always, this tremor increases in intensity until it becomes convulsive. The tremor of chronic alcoholism is in many respects similar to the slighter acute forms. It attacks almost exclusively the face, especially the lips and tongue, and the hands. It is a fine tremor, and with it is associated fibrillary contractions of the muscles, so that the picture presented is very like that of general paralysis. Fournier has described a syphilitic tremor, appearing with the secondary symptoms of that disease, but it can hardly be called distinctive.

The foregoing forms of tremor have been selected and dwelt upon because they are characteristic, and in many instances diagnostic. It should be borne in mind, as noted above, that tremor may occur in many other affections as a complicating or transitory symptom. Notably is this the case in brain and cord lesions. Whenever the motor tract is invaded, then we may have tremor. Also in all the many forms of hysteria, tremor is a very frequent symptom.

General diagnosis.—When a case presents itself in which tremor is a constant symptom, the first thing to be noted is its extent, whether it is general or local; whether it affects a whole limb, a group of muscles, one muscle, or simply certain fibres of muscle. Then, as to whether it is continuous or occasioned only by voluntary movement; whether it lessens or increases as the muscles become tired, or if it ceases altogether when perfect rest to the affected part is induced. As to the nature of the movements, it should be noted whether they are regular and rhythmical, or jerky and interrupted, and the number per second should be counted. The patient should be made to extend the arms with the fingers separated, for in this way the finer movements can be seen. Often, when one is not certain about the presence or absence of tremor, if the observer's hand is pressed lightly against the tips of the extended fingers of the patient the vibrations can be felt. One of the simplest and best tests of many forms of tremor is to ask the patient to raise a glass filled to the brim with water, from the table to his lips, or to use a spoon as in eating. If possible tracings should be made, which can be easily done by means of the modified instrument of Marey. The lower extremities should be tested in various ways, and the peculiarities of the gait noted. By careful attention to these details one is often enabled to correctly diagnose certain obscure affections in which tremor is a significant symptom.

9 East Townsend Street.

Antipyrin in Laryngismus Stridulus.—Dr. Montague Perceval, writing in *The Lancet* of November 17, 1888, recommends very highly the use of antipyrin in laryngismus stridulus. He reports the case of a child, eighteen months of age, to whom he gave the drug in doses of two grains every hour for a few hours until the child fell asleep, and then in the same dose every two hours. The following day the little patient was well. The author used the remedy in twenty-three other cases with equally favorable results, except that in one case it was necessary to increase the dose to five grains before the paroxysms ceased.

Iodide of Potassium in Aortic Aneurism.—Dr. Berényi reports in a Hungarian journal a case of aortic aneurism, accompanied by distressing symptoms of dysphagia and nightly attacks of urgent dyspnœa, in which marked relief was afforded by iodide of potassium in doses of half a drachm daily. At the time of the report the dysphagia and asthmatic attacks had disappeared, the hoarseness from which he had suffered had improved, the area of dulness over the aneurism had grown less, and the patient had gained several pounds in weight. Over five ounces of the iodide had been taken without any signs of iodism.

UTERINE ADENO-SARCOMA WITH PYOMETRA.[1]

By THOMAS W. KAY, M.D.,

EX-SURGEON TO JOHONNITER HOSPITAL, BEYROUT, SYRIA.

THE coexistence of adeno-sarcoma and pyometra in the same uterus is so rare that I am induced to bring the following case to your notice. Pyometra, of itself, is not common, as may be seen from the small space devoted to it in books on gynecology. Out of some sixteen consulted, I find it mentioned in only two, viz., Billroth and Fritsch.

It usually occurs in old people where atresia of the internal os exists, and is due to a retention of the secretions. In this case it was due to closure of the internal os by the suppurating growth.

Adenomata of the cervix are quite common in the form of small polypi composed of retention-cysts with hypertrophied walls. In this form they also exist in the uterine cavity, where a much rarer form is sometimes found. This has a broad base, and is not composed simply of hypertrophied glands, but contains new glandular formation.

These growths are diffuse, rich in blood-vessels, and, according to Winckel, infiltrated with round sarcomatous cells.[2]

Cases of this kind have been reported by Duncan, Guesserow, Schröder, Thomas, and others.

The growth in the following case probably began as this, and afterward became sarcomatous. May tells us that uterine adenomata are frequently admixed with sarcoma in the form of adeno-sarcoma.[3] Billroth remarks that "pure adenomata (which are rare) may be difficult to distinguish from sarcomata which have developed in glands (adeno sarcomata)"[4]

Thomas reports a case which seems to have been the same kind of growth as in the following. It was examined by Dr. W. H. Welch and pronounced to be a mixture of sarcoma and adenoma.[5]

Case.—Lateefy, a multipara, fifty-two years of age, was sent me by Dr. Yusuf Abu-Suleiman, of Lahley, to enter the Johonniter Hospital, of Beyrout, Syria. She complained of an offensive discharge at times from the vagina, accompanied by colicky pains. The menstrual flow ceased some ten years before, and since that time she had suffered more or less from leucorrhœa. The offensive discharge was of eight months' duration, and the pain had lasted nearly as long. Emaciation was great and cachexia was marked. Bimanual examination showed the uterus much enlarged and extending well up into the abdominal cavity. The external os would admit the end of the little finger with difficulty, and a soft friable mass could be felt in the cervical canal. The uterine probe was introduced with difficulty in front of this mass, and gave a depth of eight inches.

Assisted by Dr. I. Mutter, the woman was put in the left lateral position, a speculum introduced, and the anterior lip seized with vulsellum-forceps and well drawn down.

The cervical canal was now rapidly dilated with steel urethral sounds until the index-finger could be introduced. While this was being done, a constant flow of most offensive pus took place, till some eighteen to twenty ounces had been evacuated.

On introducing the index-finger the growth was found to cover much of the posterior uterine wall, and it was attached nearly down to the internal os. Its base was broad, and its surface irregular, soft, and sloughing. A large part of this was removed by the blunt curette, the uterine cavity washed out with bichloride solution, and the woman put to bed. Antiseptic injections were used daily, and iron and ergot were given internally. All went well, and in eight days I again dilated the uterine cavity, and with a sharp spoon removed all roughened elevations from the posterior wall. There was free hemorrhage, but this was arrested by the application of liq. ferri subsulph. Dr. W. T. Van Dyck kindly examined the growth, microscopically, for me and pronounced it an adeno-sarcoma. In three weeks the discharge had entirely ceased, and the depth of the uterine cavity was reduced to three and one-half inches; so the woman was permitted to go home, with the prognosis of a probable return of the growth.

613 PARK AVENUE, BALTIMORE, MD.

[1] Read before the Baltimore Medical Association, December 17, 1888.

[2] Lehrbuch der Frauenkrankheiten, Winckel, p. 385.

[3] Diseases of Women, May, p. 221.

[4] Diseases of Women, Thomas, p. 571.

[5] Surgical Pathology, Billroth, p. 223.

A CASE OF PLACENTA PRÆVIA CENTRALIS, WITH ITS SUCCESSFUL MANAGEMENT.

By R. R. BALL, M.D.,

ASSISTANT SURGEON U. S. ARMY, FORT LEWIS, COL.

ON October 20, 1888, after returning from duty in the field, I was requested to attend a case of expected confinement. Mrs. W. White, aged twenty-two; multipara; a fairly robust, healthy-looking blonde. On the date above stated I visited the patient, and, on questioning her, found she had been suffering with, as she expressed it, a return of her monthlies while pregnant, for several weeks past. This hemorrhage had at first come on suddenly, without apparent cause. Of late the quantity had increased each time, and on the previous night, during sleep, quite a discharge of blood had occurred, thus awakening her. Strongly suspecting the true nature of the case, I reassured her, on general principles, and then made digital examination.

The os was found moderately soft, the cervix slightly elongated and enlarged.

On entering the finger and carrying it up to inner os some resistance was felt—a peculiar, wormy mass seemed to occlude the os internum.

This mass seemed rather firmly adherent to the right side of the uterine wall. After a careful examination and elimination I diagnosed placenta prævia centralis.

The question of hemorrhage being of primary importance—the history of the case showing it had increased in quantity and frequency—rendered the conclusion that operative interference was essential, for the mother's welfare at least. Though not unmindful that most authorities advise a tentative course in such cases—especially if the hemorrhage occur previous to the seventh month—I at once introduced thoroughly a carbolized tampon around the cervix, leaving it *in situ* for twenty-four hours. These were repeated several times. On removing the last one the whole cervix was found softer, the os more patulous, and the hemorrhage had been temporarily controlled. Still dilatation was not sufficient to proceed to delivery, and normal labor-pains had not set in—which I had rather looked for after the tampon.

Barnes' rubber-bag dilator (next to smallest size) was then carried well up, so as to include inner os, and gently expanded with warm water. After three or four hours the next size was likewise introduced. At the end of five hours this was removed, the dilatation being sufficient to admit two fingers easily, and strong pains having come on.

I then carried two fingers well up and detached the placenta around internal os as far as could be reached, at the same time rupturing the membranes.

After detaching the placenta it receded up the side slightly—when the membranes and fœtus pressed downward—thus checking the hemorrhage, which had been quite profuse at the time of the detachment.

Having accomplished this, I was enabled to make out the position—a breech-case (left dorso-anterior). The pains continued very effective till the child had reached the mid-plane, when they ceased wholly—a condition of inertia coming on. The woman being very nervous and excited, as well as much fatigued by the amount of pain

incident to the preliminary treatment, and no rational indication existing to justify further delay, the question was between ergot and the forceps.

Owing to the impossibility of knowing exactly how far the placenta might still be attached, as well as for other reasons, I decided in favor of the forceps.

A few whiffs of "A. C. E." mixture were then given, and the forceps applied to the breech, which was gently brought down to near the vaginal orifice, when they were removed, the labor being completed by manual means.

The placenta was easily delivered in half an hour, and it was followed by quite a profuse gush of blood. This latter was controlled by persistent kneading (Crede's) —the administration of ergot—and, at the same time, clearing away all clots from the os with the finger.

The child, though born alive, survived only three hours. Its age, as near as I could calculate, was about six and a half months.

The patient then made an uninterrupted recovery, and, no doubt, will venture on her perilous journey again in due time.

As complete asepsis was observed as possible in all details, and at no time did her temperature exceed 101° F.

SPONDYLOLISTHESIS OF TRAUMATIC ORIGIN.[1]

By V. P. GIBNEY, M.D.,

NEW YORK.

The patient is a male, aged twenty-nine, married, and a laborer. He came under my observation for the first time, December 18, 1888, presenting the deformity and gait of an advanced case of Potts' disease, *i.e.*, he walked with body bent forward and to the right, and using much care with every step. He seemed to suffer as he walked, and I naturally supposed him a cripple of long standing.

On getting the history, however, I learned that in a collision he had been thrown from the platform of a horse-car, November 7th, had fallen on his back, receiving a severe wrench as he rolled over into the street, had been helped into a drug store in a dazed condition, and had been soon transferred by ambulance to Bellevue Hospital. The records at the hospital, kindly furnished me by Dr. Chauncey Biggs, House-Surgeon, show that on admission the patient was in a state of shock. A perineal wound was found extending a short distance into the rectum; the back and left side were contused, and he had the following fractures: Ninth rib, left side, at a point about corresponding with the anterior axillary line; tenth and eleventh ribs, left side, at points about corresponding with the posterior axillary lines; spinous processes of the eleventh and twelfth dorsal vertebræ, and probably also the spinous processes of the tenth dorsal and the first lumbar vertebræ. There were no symptoms denoting injury to the spinal cord. Motion and sensation in his legs were not affected.

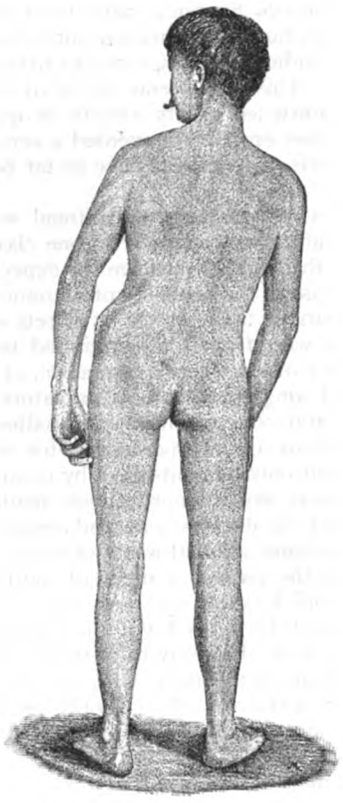
By the following day a large hæmatoma had appeared in the lumbar region on the left side. This was smaller on the next day, November 9th, and soon disappeared. Under stimulants he improved, and was discharged December 14th.

So that I saw him four days later, and the condition I noted was essentially that which presents for your consideration this evening, although on December 20th I endeavored, with patient profoundly anæsthetic from ether, to correct the deformity without avail. I have also, under the impression that a hysterical or a malingering condition existed as complication, employed the Paqueline cautery on several occasions.

The only effect that I can observe as a result of my examination and treatment is an ability to walk with possibly greater facility. He complains of pain in the distribution of the sciatic nerve, right side, and the deformity is unchanged.

[1] Presented to the Practitioners' Society of New York, March 2, 1889.

You see he stands like one prematurely old—body bent forward and to left. The ala of the pelvis on left side is unusually prominent, and apart from the apparent deformity, this would show by reason of the lateral curvature which is shown; this whole side of the pelvis stands out more conspicuously than the right side does. The lateral masses of the sacral vertebræ are more prominent on the right side, and the sacrum in general



gives one the impression that it had been wedged down into the space existing between the alæ of the pelvis. It further seems to be rotated on its vertical axis. The erector spinæ on right side being more prominent than those on left side indicate a degree of rotation of the vertebræ. Motion from the tenth dorsal to the sacrum is not possible. There is no kyphosis, and concussion does not elicit the pain one expects to find in Potts' disease with this test.

In neither iliac fossa can any tumor on deep palpation be found, and there is no reflex spasm excited when the thigh is completely extended.

Limbs appear unequal in length, but careful measurement shows neither real nor practical difference. There is no difference in the size of the limbs, and the functions of the hip-joints are normal. There is apparently much spinal tenderness. The photograph taken a day or two ago, and which I present this evening, does not show the points about the sacrum to which your attention has been called (see photograph.)

In seeking a solution of the difficulty, I am forced to the conclusion that we have in this patient a case of forward subluxation of the last lumbar vertebra on the sacrum, and in addition thereto, a downward displacement of the sacrum itself.

In 1885 Mr. Arbuthnot Lane presented a paper to the Pathological Society of London describing cases of spondylolisthesis occurring in men who carried heavy weights. He was enabled to show from specimens the modification which the lumbo-sacral articulation underwent by reason of the superincumbent weight long transmitted.

My patient seems to have suffered from momentary force rather than long-continued force, and the gross appearances certainly seem explainable on the occurrence of a spondylolisthesis.

Clinical Department.

SOME EXPERIENCES WITH SULFONAL.

By C. M. REXFORD, M.D.,

WATERTOWN, N. Y.

UNTIL quite recently the reports of the results of the use of sulfonal, the new hypnotic, have been decidedly in its favor. Of late, however, some accounts have come from abroad which indicate that it is not so harmless as was at first asserted. This drug seems to be of so much value that exact knowledge of its effects is quite desirable. Its high price has probably prevented a very extensive use of it, and reports of its effects have so far been somewhat meagre.

The writer's experience with sulfonal seems to show that it is about as well adapted to one class of cases as another, and that the only reason for expecting a failure in any given case is the presence of extreme pain.

The first patient upon whom its effects were observed was a woman who, from long-continued nervous strain, fell into a state of complete prostration, attended by intense cerebral congestion, non-inflammatory in character, with violent and constant headache, hallucinations, and finally delirium of a low type, lasting for months. This condition could only be controlled by opiates, and upon their withdrawal, which improvement made possible, it was succeeded by sleeplessness and much pain in the head. At this time sulfonal was put on the market. The first dose gave the patient a night of natural sleep, and the head felt much better the next day. No more perfect result could be desired than the drug produces in this case. A dose of twenty to thirty grains always produces sleep, relieves the distress in the head, and leaves no bad effect whatever. It has only been necessary to use the drug occasionally, and nothing like a habit has been formed.

The medicine was employed in a recent case of pneumonia. The attack was not severe; but the patient, a feeble woman, past middle life, was an extremely nervous and difficult one. Great depression of the nervous system came on, with persistent sleeplessness, which proved wholly refractory to ordinary sedatives. A dose of ten grains of sulfonal was given. No effect, besides greater restlessness, was produced for four hours. Then profound sleep ensued, which persisted for twenty-four hours. During this time it was difficult to rouse her enough to take nourishment. No other ill result followed, nor did the insomnia return. The depth of the stupor produced by the small dose employed was such as to make the result of a larger dose seem rather doubtful. This patient has a weak heart, sometimes intermitting, but it seemed not to be affected by the drug.

Another case was one suffering from chronic metritis. This patient, when first seen, was extremely debilitated by absence of appetite and want of sleep. Fifteen grains of sulfonal at bedtime acted very favorably for a time, but finally failed to induce sleep, and only caused great restlessness instead. Finally, a second dose of fifteen grains was given, four hours after the first. The patient then fell asleep. In the morning she was unable to rise. She complained of giddiness, of being unable to hold the head up, and could not stand or walk without assistance. There was vomiting, and the stomach refused to retain food for many hours. When permitted she slept a troubled, uneasy sleep for the whole day. It was not till the end of three days that she felt herself again. This patient also has a very weak heart, though there is no organic lesion. She is frequently faint, or is obliged to lie down because the heart acts badly. While under the influence of the medicine, as related, the heart-symptoms seemed to be made somewhat worse, but not notably so.

In the considerable number of other cases in which this remedy has been employed it has acted, in the main, favorably. These have been cases of nervous insomnia, and they have all yielded without any difficulty and with no untoward result.

The experience of the writer seems to indicate that sulfonal is a valuable medicine, but that it has its limitations. It is easy to take, it does not often irritate the stomach or produce ill effects. But it may fail to act as expected, and in some instances it may produce extremely disagreeable results. The dose which was at first recommended, of thirty to sixty grains, is too large to commence with. It is unsafe to give more than ten grains as an initial dose, and fifteen grains will prove a sufficient dose in the majority of cases.

INTUBATION TWICE SUCCESSFULLY PERFORMED IN SAME PATIENT.[1]

By JOSEPH EICHBERG, M.D.,

CINCINNATI, O.

THE literature of the subject of intubation, which is rapidly attaining that position which the importance and success of this substitute for tracheotomy so justly merit, has furnished us with a chapter of most interesting data of accidents, difficulties, and singular coincidences, but no one has as yet reported, so far as I know, a recurrence of croup in the same subject with a successful issue to both attempts at relief by the intubation-tube. It is, perhaps, hardly to be wondered at, that the text-books make but scant mention of the tendency to recurrence of membranous croup, seeing that, in the past, the first attack usually precluded any possibility of later attacks of this or any other affection by quickly terminating the life of the little sufferer. Even where tracheotomy has been performed with full success I find no history of a second attack of the original trouble, so that it is a most unusual history which I have the pleasure of presenting to you this evening. The patient, a little girl now four years of age, was seen by me for the first time in December, 1887, in consultation with Dr. C. G. Comegys, of this city. She was then in an advanced stage of asphyxia, cyanosis of the skin and mucous membranes being well marked, and the dyspnœa painful to witness. She had been perfectly well until a few days before, when she developed a slight hoarseness, and some cough. The difficulty of breathing had supervened only twelve hours before, and was rapidly increasing. The cough, which had previously been resonant and barking, now had a whistling, stridulous character. There was the usual inspiratory difficulty with depression of the lower portion of the chest-wall, especially marked during inspiration. The tube was promptly introduced and, barring a slight disturbance on the second day, no trouble was occasioned by its presence; and it was finally withdrawn after having been *in situ* just eight days. This is a little longer time than that which is usually held to be within the limits of safety, but the general condition of the child was rather discouraging, and, as she paid no attention to the presence of the tube, it was decided to extend the time slightly. Accordingly, it was not until after the lapse of fully eight days that the tube was removed. The subsequent course of the case was very satisfactory, and, aside from a slight hoarseness and partial aphonia, which persisted for some time, the child's health remained good until November 26, 1888, when I was again summoned to see it. It had, according to the account of Dr. Comegys, complained of some sore throat for almost a week; but there had been no exudation in the fauces, and no hoarseness was noticed until November 22d, when the cough became distinctly croupy and a slight embarrassment of respiration supervened. Emetics, administered for the relief of a supposed slight catarrhal swelling, failed to ameliorate the distress. The difficulty slowly but perceptibly increased, despite all medication, and, at the time of my visit, the anxious face and cyano-

[1] A paper read before the Cincinnati Medical Society, January 15, 1889.

sis of the surface indicated the urgency of the symptoms. The tube was at once inserted, some membrane being immediately expelled; and the child made a perfect recovery. I am sure there was no doubt in the mind of the attending physician as to the presence of an exudation in both attacks, nor is there any such doubt in mine; indeed, on both occasions portions of the membrane were expelled as soon as the tube had passed below the obstruction. As before stated, the entire interest of the case centres in the recurrence of the trouble after the lapse of a year and in the satisfactory result of both intubations.

Progress of Medical Science.

THE OPERATIVE TREATMENT OF PRIAPISM.—Dr. Vorster, surgeon to the Bethany Deaconesses' House, Berlin, has published two cases of priapism, which were successfully treated by Professor Rose by means of operation (*The Lancet.*) The first patient was of a hemorrhagic diathesis, and was admitted to hospital suffering from violent epistaxis. This was soon stopped, but severe symptoms of acute cerebral anæmia remained—headache, vomiting, and extreme feebleness of right arm and leg. Priapism came on in consequence of straining at stool, and further cerebral symptoms followed—insomnia, pains in neck, paralysis of sixth cerebral nerve, and loss of consciousness. The author consequently supposed that the priapism was due to hemorrhage in the brain produced by violent straining. The measures employed consisted of local cold applications, camphor, morphia, and chloral internally, long-continued tepid baths, and even the administration of chloroform, but all proved useless. After the priapism had continued for thirty-two days, Professor Rose determined, notwithstanding the hemorrhagic diathesis, to make an incision in order to relieve the paraphimosis which existed. This was followed by hemorrhage, which continued for three hours. The priapism then began to diminish, and in four days after the operation the penis had returned to its ordinary condition. Subsequently marked splenic leukæmia developed. The author considers, notwithstanding the coincidence of leukæmia with priapism which has been noted in medical literature, that here the leukæmia cannot have been in any way the cause of the priapism, because it was not developed until the latter had ceased. In the second case the priapism was due to hemorrhage into the right corpus cavernosum, caused by an accident. This effusion exercised pressure on the veins, and thus caused stagnation of the venous blood in the corpora cavernosa. Professor Rose, having diagnosed with certainty the occurrence of a rupture of the urethra, proceeded to perform external urethrotomy, with the object of relieving the great distention of the bladder. During the operation a hæmatoma was found bulging forward into the urethra. Upon an incision being made into this tumor the priapism disappeared. The patient was discharged cured in seven weeks.

A RARE CAUSE OF DILATATION OF THE STOMACH.—Dr. Pertik, of Buda-Pesth, has described a singular abnormality, causing obstruction to the onward passage of the contents of the stomach, and leading thereby to great dilatation of the viscus. The defect consisted in a curious pouch of mucous membrane, shaped like the finger of a glove, about eight centimetres in length and three centimetres wide, which projected into the duodenum, with the upper part of which the posterior wall of the pouch was continuous. The first part of the duodenum was much dilated, and its mucous membrane quite smooth, passing continuously into the mucous membrane which formed the internal as well as the external coat of the abnormal pouch. The mouth of the pouch thus looked upward, and anteriorly it had a free lip or margin, close to which the common bile-duct opened, suggesting the possibility of the formation of the pouch in an abnormality of the fold of mucous membrane that occurs at the orifice of the duct. But there was no evidence of gall-stone or any other cause which could have produced it. The probability is that the pouch was formed from one of the valvulæ conniventes, although the precise mechanism of its production is obscure. The entire absence of the folds from the dilated duodenum above the pouch may doubtless be ascribed to the distention which this portion of gut underwent in common with the stomach. In introducing the subject, Dr. Pertik makes some general remarks upon the etiology of gastric dilatation. Exclusive of congenital strictures of the pylorus, etc., he points out that the diminished power of the stomach to expel its contents may be brought about by: 1. Obstruction at the outlet—as from cicatricial or malignant strictures, hypertrophy of the muscularis or mucosa at the pylorus, polypi or tumors in the pyloric region, or external pressure on this part by tumors in the vicinity. 2. An actual loss of muscular power in the stomach, without any obstruction—as following on chronic catarrh, extensive ulceration, carcinomatous infiltration, peritonitic adhesions; and general conditions leading to loss of tone—as anæmia, typhoid fever, phthisis, etc. 3. An excessive amount of contents, as has been observed in the polyphagous, diabetics, and vegetarians; so that the pyloric orifice becomes relatively too small for the ready passage of the bulky gastric contents. The curious case related above falls, of course, under the first head, but the obstruction was in the duodenum, and not at the pylorus.—*The Lancet.*

IS INSTRUMENTAL DELIVERY A CAUSE OF IDIOCY?—Drs. Winkler and Bollaan have written a paper in a Dutch medical journal on "The Forceps as a Cause of Idiocy." They mention a case of bilateral, almost symmetrical, damage to the cortex of the brain, found in an idiot (*The Lancet*). The boy had been born with the aid of forceps. Only part of the vertex could be examined. There were no marks of the forceps, yet there were strong reasons for belief that the injury was caused by them. In another case there was still more ground for the opinion that injury had been caused by forceps. In this child, who was an idiot from birth, there were marks of the forceps on both sides of the skull corresponding almost exactly to the damage done to the brain. This coincidence was too remarkable to be accidental. Drs. Winkler and Bollaan performed necropsies on ten idiots, and examined twenty-five living idiots, of whom six had bilateral depressions in the skull. Another case was that of a woman born with the aid of forceps, an inmate of the Utrecht Asylum for four years. She was very short, being only 1.27 metre high, and small in proportion. She could make all move ments, isolated movements being difficult to her. There were but two words which she could say, and she never gave any sign of understanding what was said to her. She died at the age of sixty, and at the necropsy the brain was found to be very small. All the organs at the base of the brain, the optic nerves, olfactory nerves, etc., were found to be very small. Deep depressions were found on either side of the sagittal suture, the right side being the more indented. The brain was much atrophied. The authors believe that depressions of the skull caused by instrumental delivery, even when no fracture occurs, tend to damage the cortical substance of the brain, and that this leads to general atrophy of the hemispheres, thus producing idiocy. They are disposed to think that the use of forceps is much more frequently the origin of idiocy than is generally supposed.

STRYCHNINE AS AN ANTIDOTE IN NARCOTIC POISONING.—Dr. G. A. Gibson calls attention in *The Practitioner* for December, 1888, to the value of strychnine in antagonizing the paralyzing action of narcotic poisons upon the medullary centres. In cases of respiratory failure during chloroform or ether anæsthesia, he has also found hypodermatic injections of strychnine to be of great service.

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New York, March 30, 1889.

A NEW METHOD OF OPERATION FOR THE REMOVAL OF NASO-PHARYNGEAL TUMORS.

IT is quite generally admitted at present that a majority of naso-pharyngeal growths call for operative interference. This may be either of the cutting kind, or by means of the snare, scoop, cautery, ligature, or some such procedure. Probably the cold snare and galvanic wire are more frequently employed nowadays than any of the other non-cutting methods. But, even with the recent improvements in instruments of this kind, the success attending such operations is far from being universally satisfactory. The main difficulty lies in the circumstance that essential steps of the operation are necessarily undertaken in the dark.

Mr. Thomas Annandale has devised a method of operation (*The Lancet*) intended to do away with some of the objections to surgical interference in this class of diseases. In three cases Annandale's method has been successfully carried out. The author admits that such growths have been reached through the palate by Nélaton and others, but not in the simple way presently to be described. As far as he is aware, his operations have demonstrated, for the first time, the fact that when the alveolar margin and palatal portions of the upper jaw have been divided along their centre, from before backward, and the bony septum of the nose cut through, the anterior nares having first been exposed by Rougé's plan, the two upper jaws can be separated to the extent of from half an inch to one inch, so as to give access to the posterior nares and base of the skull.

The steps of Annandale's method are as follows: 1. The exposure of the anterior nares by freely dividing the mucous membrane connecting the upper lip and upper jaws, according to the plan of Rougé. 2. The division of the bony septum of the nose along its attachment to the jaw. 3. Incising the soft parts along the middle line of the hard palate, and then sawing through the alveolar margin of the upper jaw, and through the entire hard palate along the same line. The soft palate may or may not require division in its middle line. The necessity for this depends upon the size and attachments of the growth. (In one of his cases he did not divide it; in the other two he did.) 4. The forcible separation of the two jaws, and the introduction through the gap of the finger, periosteal scraper, or other similar instrument, with the view of separating the *secondary* connections of the growth to surrounding parts. 5. The removal of the growth from its primary site of origin by forceps, sharp spoon, cold snare, or galvanic wire. (In all his cases he used strong forceps, assisted by a periosteal elevator and a sharp spoon.) 6. When the tumor has been removed, the introduction of some form of antiseptic plug, such as a plug of lint soaked in carbolic acid, and well dusted with iodoform. 7. The jaws are now brought together again, and secured by one wire suture through the alveolar margin of the bone, and two or more horsehair sutures through the soft parts of the palate wound.

In his further remarks about these operations Annandale says that, in all three cases, the patients were thoroughly anæsthetized, and during the operation the head was placed in a dependent position, resting over the edge of the operating table. In one case preliminary tracheotomy was required because the patient was unable to respire properly when lying upon his back, owing to the pressure of the tumor upon the larynx. But in the other two cases the operation was completed without any difficulty as regards the respiration or flow of blood into the air-passages. Although advocating this special method in cases which demand some cutting operation, he by no means condemns all other plans of procedure, for he believes with Sands that in cases of sarcoma, or in cases in which the attachments of the growth are extensive, the excision of the whole or of a portion of the upper jaw will give the best and most certain result.

The advantages of his method, according to Annandale, are the following: 1. It is a simple procedure, and if the growth can be removed by its aid no deformity results. 2. Should it be found that the growth cannot be properly exposed and removed in this way, the proceeding forms one usual stage of a more severe operation—namely, the removal of the upper jaw itself—and therefore it assists, and does not interfere with further operative measures. 3. From his experience of operations for the removal of naso-pharyngeal growths, he has a strong opinion that the central section, as advised, is accompanied by less bleeding than most of the other cutting operations practised.

SOME REAL OLD FOLKS.

To judge from the frequent references to old people appearing in the daily papers, from the articles on the prolongation of life in the popular magazines, and from the more or less scientific reports on the same subject in medical publications, this world of ours would seem to be passing through an epidemic of longevity second only in degree to that recorded in ancient times, wherein Methuselah was such a prominent figure.

Numerous instances have been brought out in these investigations of persons who have lived a century and upward, and many of them are so well authenticated as to disprove entirely the assertions of those who hold that human life never surpasses, or even reaches, the term of one hundred years. But these modern instances of longevity pale before those cited in the old records of two or three centuries ago. Many of these records give the dates of birth or of baptism, and of death, of the persons mentioned, and while it is not of obligation to yield implicit belief as to their accuracy, we cannot deny that they furnish us examples of long life far surpassing that usually allotted to man.

In a curious book, entitled "The Code of Health and Longevity," by Sir John Sinclair, published in the early part of this century, we find several portraits of old people, accompanied by brief biographies. Some of these histories, as that of Thomas Parr, or "Old Parr," who is said to have died at the age of 152 years, and is buried in Westminster Abbey, and that of Catherine, Countess of Desmond, who had three or four sets of (natural) teeth, and who made the journey from Bristol to London after she had passed her 140th year, are among what may be termed the classical tales of longevity, and are familiar to all students of the subject. There are others, however, which are not so well known, although making even greater demands upon human credulity.

The oldest of the worthies figured in this volume is Czartan Petratsch, *anglicé* Peter Zortan, who lived to the ripe old age of 185 years. He was born near Tameswaer, in Hungary, in 1537, and died in January, 1723. He is represented in the picture sitting beside an old ruin, his countenance expressive of the utmost dejection, and looking wearily at a pot in which he is boiling his dinner, for which, however, he evidently has but little appetite. His whole appearance is indicative of the most profound disgust with the world, with whose miseries and disappointments he had had such a long experience.

The climate of Hungary would seem to have been conducive to longevity, for we find the portraits of two other old people who lived and finally died in the same district. These were John Rovin and his wife Sarah. At the time the picture was taken their ages were 172 and 164 years respectively, but how long they survived this period is not known. Mrs. Rovin is represented sitting upon a bench in the open air, while her husband is bringing her something that might be a bunch of bananas, a bundle of fagots, or the head-dress of an Indian chief. They both look rather weary and have lost somewhat of the freshness of youth. Lying beside Sarah is an antique cat that looks as if she might have been a good-sized kitten when the parents of this aged couple were children. They had four children living at that time, the youngest of whom was a promising lad of 116 years. Time had dealt less gently with the old lady than with her spouse, for while she was in reality eight years younger than her husband, her picture makes her appear several centuries older.

Scotland seems also to have been the home of many centenarians, though but one of them could rival these Hungarians in his length of days. Among these were Isobel Walker, who trod this earth for 112 years, and Peter Garden, who tilled the Lord's vineyard for thirty-one years over and above a century. John Taylor lived a bachelor for sixty years, then took to himself a wife and was rewarded, or punished, for this action by seventy-two years of added existence. The oldest Scotchman, of whom there is any record, was Bishop Kentigern, afterward beatified under the name of St. Mungo, who founded the Bishopric of Glasgow, and who lived to the age of 185 years. The record of his age and of his place of interment is presented in a Latin couplet quoted in Spottiswood's "History of the Church of Scotland."

Very little is said about the habits of these people, to serve as a guide for those who would care to secure an equally long lease of life. Most of them, however, are reported to have been God-fearing persons of a placid disposition and simple tastes, working hard without worry, satisfied with their lot, eating moderately, and sleeping soundly. And, although nothing is said on this point, we dare affirm that they never smoked cigarettes.

THE DURATION OF LIFE IN CANCER OF THE BREAST.

THE average duration of life in cases of mammary carcinoma is very variously estimated by different observers, ranging from 28 to 55 months in those not operated upon, and from 32 to 53 months in cases in which the new growth has been removed by the knife. Thus Gross, whose statistics are among the least hopeful, gives as the average duration of life, of those in whom the disease had been permitted to run its course, 27.1 months, and of those operated upon about 39 months. Sibley's figures for the same classes of cases are 32.25 and 53.2 months. Baker makes the average, for cases uninterfered with by operation, 43 months, while Paget's estimate for the same class of cases is 55 months.

By far the most hopeful figures which we have seen are some given by Mr. W. R. Williams, in *The Lancet* of January 12, 1889. He has recorded and tabulated all the fatal cases of cancer under treatment at the Middlesex Hospital during the last six years, with the result that the average duration of life, dating from the time when the disease was first noticed, was 60.8 months for those who had undergone operation, and 44.8 months for those in whom the disease ran its natural course. The longest duration of life when the breast was amputated was 297 months, and when no operation was performed, 194.7 months. The author thinks that his statistics justify surgeons in taking a less despondent view of mammary carcinoma than is ordinarily taken.

PULMONARY CONSUMPTION AS A NEUROSIS.

SOME French writers are very fond of referring many, and apparently dissimilar, diseases to one common pathological state, which they denominate herpes, and which they regard as the underlying condition of numerous affections looked upon by the rest of the world as independent diseases. The affections thus classified are many and various, even pneumonia being included among the herpetic diseases; but it has been left to an American, Dr. Thomas J. Mays, of Philadelphia, to extend this theory to, it would seem, its utmost limits, for he is, we believe, the first who has ever attempted to squeeze tuberculosis into this procrustean mould. It is true that a few writers, chiefly English and French, have more or less haltingly hazarded the opinion that phthisis is a neurosis; but to Dr. Mays certainly belongs the honor of having elaborated this theory and of having fortified it by an array of elaborate and ingenious arguments. Two of a course of evening lectures, given by the Faculty of the Philadelphia Polyclinic during the past winter, were devoted by Dr. Mays to a development of this theory. These were subsequently published in the *Therapeutic Gazette* in November and December, 1888. Stated briefly, the lecturer's belief concerning phthisis is that it is not a local disease, but that it is essentially a neurosis of the peripheral nerves. This peripheral neurosis induces a herpes of the vagi, giving rise to lesions in the lung similar to the cutaneous manifestations

of herpes zoster of other nerves. The grave consequences of pulmonary herpes are owing, not to the nature of the lesions, but to their seat. When located on the skin the morbid products are easily gotten rid of, but in the lungs they are pent up, and finding no ready exit work destructive changes in the tissues.

The main argument upon which the author bases his peculiar theory is the somewhat fallacious one that certain neuroses are frequently found accompanying consumption, the severity of their manifestations being often in inverse proportion to the progress of the pulmonary lesions. Among the symptoms which he instances as evidences of a neurotic condition are fatigue, loss of appetite, emaciation, hoarseness and aphonia, dyspnœa, sweating, diarrhœa, hæmoptysis, œdema, and thoracic pains. He cites a large number of cases intended to show the alternation in members of the same family of pulmonary tuberculosis and nervous affections, and also the association in the same individual of consumption and certain well-recognized peripheral neuroses.

It is certainly rather startling in this age of microbes to find a physician of ability and large experience arguing in support of the neural origin of tuberculosis, for we assume that he does not deny the identity of the tubercular affection, whether it be in the lungs or in the kidneys, joints, glands, or any other organ of the body, although his thesis deals only with the pulmonary location of the disease. And though we fear Dr. Mays will not live to see his theory accepted by the profession, we can nevertheless commend his courage and recommend his paper to the thoughtful consideration of all who can respect the convictions of an earnest thinker, however little they may be inclined to agree with him.

AN EARLY SIGN OF ENDOCARDITIS.

Every one who has watched a case of acute articular rheumatism and has noted the appearance, during its course, of valvular lesions of the heart, must have wished for some means whereby the intercurrence of endocarditis might be detected at an early period. Usually the first sign of this complication is a murmur at one or other of the cardiac orifices, an indication that the valves are already involved in the inflammatory process.

Dr. Duclos, of Tours, writing in the *Revue Générale de Clinique et de Thérapeutique*, January 17, 1889, records a fact of his experience, in regard to commencing endocarditis, which may possibly be of value as an aid in the early recognition of this affection. While in charge of a military hospital he chanced to have a large number of young soldiers suffering from acute articular rheumatism under his care. One day, while listening to the heart-sounds of one of these patients, his finger being at the same time on the radial pulse, he was struck with the want of synchronism between the ventricular contraction and the pulsation at the wrist, the latter being delayed about two-thirds of a second. The following day a systolic apex murmur was heard. Thinking that this retardation of the radial pulse might have some significance in connection with the subsequent development of endocarditis, he took pains to note its occurrence in other cases, and found that it was followed by a murmur at the end of from twenty-four to thirty-six hours in every instance. These observations were extended over a period of several years, and were confirmed in a number of cases by Professors Parrot and Potain.

The author has no conclusive theory to offer in explanation of this phenomenon, but he thinks that it is probably due to a weakening of the muscular fibres subjacent to the endocardium. He compares it to the weakened respiratory murmur frequently observed at the beginning of a pleurisy a few hours before a friction-sound is developed or effusion takes place. It would be interesting to learn whether this want of synchronism is present in the beginning of endocarditis arising in the course of other diseases, but the author has few observations bearing on this point to record. He has noted it, however, in two cases of typhoid fever and in three of erysipelas, in which endocarditis subsequently developed.

Dr. Duclos draws some practical conclusions, in regard to treatment, based upon the early recognition of the affection, and he believes that he has succeeded in arresting the disease, in certain cases, before irreparable injury had resulted. His plan is to apply immediately a large flying blister over the præcordial region, or, in default of this, a mustard-plaster, dry cups, or leeches. He increases also the dose of the remedy that is being at the same time given for the rheumatism. Of course, a strict enforcement of recumbency is also indicated.

When we consider the importance of an early diagnosis of endocarditis, and the possibility of arresting the disease if detected in its incipiency, this alleged premonitory symptom of the affection is worth testing in order to determine the amount of practical utility that it may possess.

PROFESSIONAL PATENTS VERSUS A LIBERAL PROFESSION.

At a meeting of the New York Odontological Society, held at the Academy of Medicine on the evening of March 19th last, a paper was read by Dr. H. C. Meriam, of Harvard University Dental School, entitled, "Professional Atmosphere and Morals; or, Patents and Secrets versus a Liberal Profession." Statements made by the essayist, and by those who discussed the subject, reveal a condition of things in dentistry which, if understood, can hardly fail to impress the minds of physicians with the possibilities involved in professional patents when followed to their legitimate conclusions. He said that dentistry was so fettered by patents obtained by dentists, and held by persons or corporations, that it could not be called free, and that it could lay no just claim to being a liberal profession so long as dentists patented their devices and sold them to manufacturers and others, who held them either to maintain a monopoly of their manufacture and sale, or for the purpose (often practised) of preventing their being made at all, when their use would conflict with the sale of instruments or devices out of which more money could be made. Quotations were made from two dentists, one of whom said, that "so long as dentists who patent their inventions and make money out of them are honored as leaders in schools, and by societies, so long will dentistry remain a trade, and I shall be ashamed to use my dental degree;" and another had written, "we are fast becoming a mere tender to a trade association, and about all the liberty left us is the right to buy what the association allows its members to sell."

The claim was made that patents, instead of being stimuli to the improvement of instruments and appliances, were an actual hinderance, because no one could make, use, vend, or improve anything covered by a patent without the permission of the person owning the patent; and that the inhibitory power thus conferred was more sought for than the privilege of making or vending. The charge was made that dentists were selling the control of instruments to manufacturers, and also the control of processes and operations to companies who wish to license, thus providing an upper and nether millstone between which the great body of the profession can be ground exceeding small. College professors, and editors of journals professedly devoted to the interests of the profession, were accused of working students and the profession for what they could make out of them. The speaker claimed that patents and secrets were a falsehood in a liberal profession, and among letters read by him sustaining his position were one each from Drs. Oliver Wendell Holmes, David W. Cheever, and H. P. Bowditch.

The speaker was enthusiastically applauded, and the sentiments expressed were endorsed and commended by Drs. W. H. Dwinelle, E. A. Bogue, S. G. Perry, and J. Morgan Howe, of New York; C. D. Cook, of Brooklyn; C. N. Pierce, of Philadelphia; D. B. Parmele, of Hartford; Potter, of Boston, and others.

One well-known dentist said that it was one of the greatest regrets of his life that he had ever taken out a patent, and that he would never commit such a mistake again. There was no audible dissent from the conclusions of the essayist.

HEADACHE AND ITS RELATION TO THE RETENTION OF URIC ACID.

The etiology of many forms of headache is still quite obscure. Dr. A. Haig[1] maintains that one variety of periodic headache is directly due to the retention of uric acid in the system. The usual sequence of events, according to him, is as follows:

There is a time (say seven to ten days) of good general health, active nutrition, and bodily activity, with plus formation of uric acid and urea, and concomitant rise in acidity. As acidity rises, uric acid comes to be retained, and at the end of four or five days several grains may be regarded as stored up in the liver and spleen. Then come dyspepsia, gastro-intestinal catarrh, and hepatic congestion (and Dr. Haig is not by any means certain that this hepatic congestion and gastro-intestinal trouble may not be the direct result of the accumulation of uric acid in the liver and spleen). These quickly result in general diminution of absorption and nutritive changes, with lessened formation of uric acid and urea and a fall in acidity; and lastly, as the result of this falling acidity, there comes a rush of the stored uric acid into the blood and the headache begins.

Such a sequence may be seen to some extent in the figure that accompanies his paper on headache ("Transactions," 1887), for there the urea drops from 561 grains to 363 grains in the four days that immediately precede the headache. Although acidity was not estimated in this instance there can be no doubt that it followed and shared in the fall of urea to a large extent. Such a sequence explains the periodicity of this kind of headache, and the way in which it comes to occur every week or ten days for many years, varying only in degree with the corresponding variations in nutrition. It is also evident that any causes which affect digestion will influence the attack in one of the above ways; while all causes of debility, by weakening the nerve-centre on which the uric acid acts, will render it more sensitive (the reverse of the action of bromides) and the attacks more frequent. A knowledge of these facts gives him almost complete power either to cause or cure this headache in himself and other sufferers.

The good effects of salicylic acid, and the salicylates generally, in this variety of headache, are due to the circumstance that they facilitate the excretion of uric acid, and thus prevent the retention of excessive amounts within the body.

[1] Effects in Health and Disease of some Drugs which cause Retention of Uric Acid, etc. Reprinted from Medico-chirurgical Transactions. London, 1888.

DEATH IN THE SCHOOLS.

The death of one of the public-school teachers of this city from typhoid fever, recently, has justly excited a great deal of criticism, and will lead, we trust, to a more careful examination of our public-school buildings.

At the same time we would call attention to the fact that it is in nowise proved, as yet, that the typhoid fever from which the patient died was contracted in the school building. Typhoid fever is a specific disease, and infects the system almost exclusively through food and drink taken into the stomach. The inhalation of poisoned air may weaken and predispose to the disease, but only in rare instances does it cause the specific fever. Hence the home surroundings of a patient always come in for special investigation. We venture to suggest that the late Miss Gibbs, the teacher in question, did not actually contract the disease in the school-house, despite the abominable and inadequate ventilation of that building.

IMPORTING DOCTORS.

The *International Journal of Surgery* publishes an advertisement which recently appeared in the *Allgemeine Medicinische Central-Zeitung* of January 26, 1889, announcing a vacancy in the house-staff of the German Hospital of this city. The qualifications and emoluments are stated. The *Journal* justly, we think, protests against sending to Europe for house physicians to our hospitals. The German Hospital is supported by American citizens and American money. Its staff is even paid a liberal sum, a thing not done in most hospitals. There are plenty of competent American graduates who speak German, and who would be glad of the advantages of a city hospital.

THE CAUSES OF DEATH AMONG THE GOUTY.

Dr. Edward Casey has prepared some tables regarding the causes of death among the gouty. The data were obtained from the Collective Investigation Committee, and bear upon the conditions in Great Britain chiefly. The number of cases analyzed was 2,399, of which 529 were of gouty persons. The deaths all occurred in persons above the age of forty. Dr. Casey also classifies the cases in accordance with the drinking habits, *e.g.*: Class

B = abstemious; Class C = moderate drinkers; Class D–E = the free drinkers.

The following table summarizes the results of the work very well. It shows the percentage proportion of deaths from several causes to deaths from all causes in the same classes:

	B.		C.		D-E.	
	Gout.	No gout.	Gout.	No gout.	Gout.	No gout.
Bright's disease	8.9	2.8	8.4	2.9	10.3	5.9
Heart diseases	12.5	15.8	11.4	12.0	17.1	12.2
Apoplexy and paralysis	13.9	13.2	16.2	11.1	15.6	10.8
Cirrhosis of liver	....	....	1.2	1 0	6.1	6.7
Malignant disease	5.0	6.2	4.8	6 5	5.0	4.6
Bronchitis	11.9	13.0	13.2	13.3	10.3	9.3
Pneumonia	5.0	6.2	10.2	8.4	5.0	11.5
Phthisis	2.0	9.3	3.0	8.9	3.8	12.5
Old age	15.8	13.5	8.4	10.4	3.4	3.0

Dr. Casey shows by this table that Bright's disease is closely related to the gouty diathesis. It appears to be nearly three times as frequent a cause of death among the gouty as among the not gouty, at all ages alike, and both in the temperate and the intemperate, the disproportion being, however, somewhat less in the latter class.

Regarding heart disease he says: "The effects of gout in the production of heart disease appear to be strongly marked during the period of middle age, but not in the later years of life. It seems probable that heart disease of gouty origin generally runs its course before old age is reached. The frequency of cardiac disease among the not gouty shows no special connection with habits of intemperance; but it must be borne in mind that the relative mortality of the intemperate is very much greater than that of the abstemious."

Apoplexy shows the same tendency as Bright's disease and heart disease, but in less degree.

Cirrhosis.—The data concerning this disease are scanty, but no relationship to gout appears.

Of malignant disease the same may be said.

Bronchitis seems to be uninfluenced either by gout or by intemperance.

Pneumonia and the diseases grouped with it appear to be less common among the gouty, but to be more fatal among the intemperate classes. The category is, however, a miscellaneous one, and not improbably includes some tubercular cases.

Phthisis is shown to be very considerably less common as a cause of death among subjects of gout.

Finally, it is shown that the gouty habit in the case of the temperate is no hinderance to the prospect of attaining extreme old age.

ARSENICAL POISONING FROM GREEN CANDLES.—At a children's party in London, last Christmas, a number of the little guests, as well as several of the adults, were seized with curious and inexplicable symptoms, which could not be traced to the ingestion of any particular food or liquid of which they had partaken. Attention was then drawn to the candles on the Christmas tree, many of which were green, and these, when submitted to analysis by the county analyst, proved to contain Scheele's green, the red candles, moreover, being colored with vermilion.

News of the Week.

SOUTH CAROLINA MEDICAL ASSOCIATION.—The next Annual Meeting of the South Carolina Medical Association will be held in Charleston, S. C., on Wednesday, April 24, 1889.

REOPENING OF ST. ELIZABETH'S HOSPITAL.—Judge Barrett's recent decision in favor of a majority of the members of the Congregation of the Third Order of St. Francis, which owns St. Elizabeth's Hospital in West Thirty-first Street, in the proceedings against Mother Mary McNulty, who opposed the corporation, will have the effect of reopening the hospital on April 15th. St. Elizabeth's is the only hospital in the city where a physician can send his patient and treat him himself. Any reputable physician can, on proper introduction, avail himself of this privilege, and Sisters will be detailed to carry out his instructions with regard to his patient. Sister Mary Joseph will conduct the hospital when it is reopened. The institution was founded in 1870 by members of the lay order of St. Francis. Two years ago, under Mother Mary McNulty, who was an aged woman, the institution became disorganized, and Archbishop Corrigan was asked to interfere, and two regular Franciscan nuns were put in as assistants to Mother McNulty. She fancied that they were trying to secure possession of what she considered her property, and began suit to restrain them.

THE ANNUAL MEETING OF THE NATIONAL ASSOCIATION OF RAILWAY SURGEONS will be held at St. Louis, Mo., on Thursday and Friday, May 2 and 3, 1889. The prospects are that this will be one among the largest gatherings of medical men ever assembled in this country. Dr. W. B. Outten, of St. Louis, is the Chairman of the Committee of Arrangements, and everything will be complete for the accommodation of the surgeons. Any information desired can be had by addressing the Secretary, C. B. Stemen, M.D., Fort Wayne, Ind.

MISSISSIPPI STATE MEDICAL ASSOCIATION.—The Annual Session of the Medical Association of the State of Mississippi, for the current year, will be held in the city of Jackson, commencing on the third Wednesday in April (17th), at twelve o'clock noon, and continue for three days.

STATISTICS OF ABDOMINAL AND PELVIC SURGERY.—In Paris, M. Péan, in presenting to the Academy of Medicine the sixth volume of his "Clinical Surgery" (St. Louis Hospital), said that the third part contained statistics of 182 gastrotomies performed by him, from January 11 to December 31, 1886, which brings up to a total of 945 such operations from 1864 to 1887. Of these 182 operations, 71 were for the removal of tumors of the ovaries, tubes, and broad ligament (68 by abdominal and 3 by vaginal operation), and only one of these failed; 90 for uterine tumors—23 hypogastric (3 deaths), and 67 vaginal (1 death). The remainder were distributed as follows: For tumor of mesentery, 1 (fatal); of peritoneum, 4 (1 death); of intestine, 1; of abdominal wall, 1; of kidney, 4 (1 death); of liver, 2; of pelvis, 7 (3 deaths); of iliac fossa, 1 (fatal). Thus there was a gross total of 170 successful and 12 unsuccessful operations.

DISTRIBUTION OF THE HOSPITAL COLLECTION FUND.—It is announced that the collection for the year amounted to $52,033.40, as against $50,449.15 the year before. Of this amount $5,502.75 was designated, and $46,530.65 undesignated. Reserving $2,530.65 to cover part of the expenses of last year, as well as the expenses of the current year, there remained $44,000 of the general fund, which was distributed on the basis of free work as follows:

	Number of Days of Free Work.	Rate 12.30 Cents per Day per Patient.
1. Mount Sinai	59,896	$7,365 80
2. St. Luke's	53,768	6,541 76
3. German	39,095	4,807 51
4. Ruptured and Crippled	36,586	4,500 05
5. St. Mary's	18,618	2,246 89
6. Home for Incurables	17,888	2,198 62
7. House of Rest	13,942	1,710 27
8. Holy Comforter	12,339	1,512 51
9. Colored	11,962	1,471 32
10. Montefiore Home	10,456	1,286 08
11. Skin and Cancer	9,162	1,125 92
12. Manhattan Dispensary and Hospital	8,818	1,081 62
13. Woman's	7,972	970 27
14. French	7,857	960 53
15. Orthopedic	7,727	950 42
16. Manhattan Eye and Ear	7,171	977 89
17. New York Eye and Ear Infirmary	6,527	802 82
18. New York Infirmary for Women and Children	6,471	795 93
19. New York Ophthalmic	6,303	775 26
20. Post-graduate	4,963	607 58
21. New York Medical College and Hospital for Women	4,807	591 26
22. Convalescent Home	3,112	381 34
23. New York Ophthalmic and Aural	2,285	282 10
Special expense deduction		156 25
Totals	357,725	$44,000 00

THE PATERSON (N. J.) GENERAL HOSPITAL has received a bequest of $10,000 by the will of the late Mr. Samuel Pope.

A NEW DIAGNOSTIC SIGN OF HERNIA.—Dr. Multanovski suggests the addition of a new diagnostic sign to the classical method of diagnosing abdominal hernia. Having made observations on one hundred and fifty-two cases of hernia in Professor Bogdanovski's wards, he states that in all these, when the finger was passed up into the abdomen, a more or less tightly stretched strap-like band could be detected connecting the contents of the sac with those of the abdomen.—*Lancet.*

CARL ZEISS, the widely known manufacturer of lenses, microscopes, and microscopical instruments, has lately died at Jena, aged seventy-three years.

AN AMERICAN HOSPITAL is one of the features of the city of Mexico. All English-speaking persons that apply are admitted. Regular contributors to the hospital, who subscribe not less than $1 monthly, and Americans without means of support, are entitled to attendance and medical treatment in the general ward, free of all charge. Other persons may enjoy the privileges of the hospital on equitable terms, and private rooms are provided for such as desire them.—*Journal of American Medical Association.*

HISTORY OF THE MEDICAL PROFESSION IN CANADA.—The descendants of the early doctors of Upper Canada will be interested to learn that there is being prepared an historical account of those pioneer practitioners, by Dr. Canniff, of Toronto, the author of "The Settlement of Upper Canada."

ANTERIOR METATARSALGIA is the name given to a painful affection of the forepart of the sole of the foot and the metatarsal joints. It is described by Dr. August Pollosson, of Lyons, France, and is evidently much the same thing as the Luxation Neuralgia described by Dr. Morton, of Philadelphia, and under the head of Acroneuroses by Dr. Dana, of this city. An annotation in *The Lancet* calls attention to the description of a case by Dr. Edmond Roughton, who also shows how easily some forms of the trouble are cured. He writes: "A medical man, aged thirty-three, complained to me that for eighteen months he had suffered from attacks of burning pain in the fore part of the sole of the left foot. The pain occurred several times a week, and was usually brought on by prolonged standing or by walking any considerable distance, and was sometimes so severe as to cause him to remove his boot and grasp the sole of his foot in his hand. On examining his foot, I found that the transverse arch formed by the heads of the metatarsal bones had sunk, so that a distinct convexity replaced the concavity normally found in this situation. I advised him to practise the gymnastic exercises so beneficial in ordinary flat-foot—viz., to take every opportunity of raising the body on tip-toe, and so strengthen the tendons and muscles of the sole of the foot. Since resorting to this treatment (now nearly a month) he has been quite free from pain.

THE LABORATORY OF HYGIENE OF THE UNIVERSITY OF PENNSYLVANIA has been promised $25,000, if another $25,000 can be raised by the University.

TRAVELLING WITH CONSUMPTIVE PATIENTS.—The sanitary authorities of New South Wales and Victoria have signified their intention of communicating with the various steamship companies with a view to action being taken to avoid the possibility of healthy and consumptive patients occupying the same cabin.

SIX LAPAROTOMIES IN ONE WOMAN.—The *Gazetta Medica di Torino* records the case of a woman, fifty years of age, who had submitted to laparotomy upon six different occasions at the hands of Professor Franzolini. The operations were performed between June, 1879, and April, 1887. The first was in consequence of fibro-cystic disease of the uterus. A triumph of surgery such as this, we may well believe, is without precedent, and the most satisfactory part of the case is that the patient has since the last operation been in the enjoyment of good health. So does she deserve her reward!—*Medical Press.*

THE TANNIN TREATMENT OF PHTHISIS.—Dr. E. Houzé, of the Hospital St. Jean, Brussels, after having tried the tannin treatment on all his phthisical patients for the last year and eight months, states as the result of his observations, that it gives excellent results in all stages of the disease, and especially in the condition where cavities exist. Indeed, he has no hesitation in declaring that of all the different kinds of treatment for phthisis which he has tried this has given by far the most encouraging results. The dose he employs ordinarily is fifteen grains, which quantity is taken three times a day. It is, as a rule, well borne; where this is not so, it is ordered to be taken with meals. After the first few days, the expectoration and the sweats diminish, the cough decreases, and in many cases the appetite undergoes a marked improvement. The majority of the patients suffered from some slight degree of constipation, though in some this feature was sufficiently marked to require treatment; while others, again, suffered from diarrhœa.

THE SPRING'S WORK IN CINCINNATI.—A correspondent writes that the Miami Medical College has graduated 22 students; the Cincinnati College of Medicine and Surgery, 32; the Medical College of Ohio, 86; the Pulte Medical College (Homœopathic), 24; the Ohio College of Dental Surgery, 65; and the Cincinnati College of Pharmacy, 18. Totals: Doctors, 164; dentists, 65; druggists, 18.

MEDICAL GRADUATES.—Following are the numbers of graduates from schools that have recently closed the session of 1888–89: Baltimore Medical College, 21; Starling Medical College, 28; University of Nashville and Vanderbilt University, 98; Baltimore College of Physicians and Surgeons, 67.

THE EMPEROR WILLIAM OF GERMANY has forwarded the modest sum of $150 for the benefit of the new City Hospital of Baltimore.

EXHIBITS AT THE NEXT MEETING OF THE AMERICAN MEDICAL ASSOCIATION.—The Chairman of the Committee of Arrangements, Dr. Stover, announces that the following classes of applications will be entertained: 1. Medical books and stationery, charts and diagrams, busts, portraits, engravings, photographs, etc. 2. Hospital and ambulance plans and models. 3. Surgical instruments and supplies, general and special (gynecic, obstetric, orthopedic, laryngeal, otic, ophthalmic, dental, etc.). 4. Microscopes, analysis outfits, and electro-galvanic apparatus. 5. Pharmaceutic products. 6. Rubber goods applicable to medicine and surgery. 7. Invalid furniture. 8. Invalid foods. 9. Sanitary appliances, as ventilators, filters, w. c. basins, traps, and similar necessities, and disinfectants.

THE DEATH OF DR. WILLIAM L. WARDWELL, at Tucson, Ariz., on March 21st, brought to an untimely close a most promising career. Dr. Wardwell graduated from Bellevue Medical College in 1878, he spent several years at the Vienna General Hospital, and at Leipsic in Cohnheim's Laboratory of Pathology, Returning to New York—his home—he entered Bellevue Hospital, serving for eighteen months on the surgical side. He was later appointed instructor in surgery in the New York Polyclinic, a school of clinical medicine and surgery for physicians, where he worked with great credit until prostrated by pulmonary consumption. He was the author of several articles in "Wood's Handbook of Medical and Surgical Reference," and other valuable papers.

DEATH OF PROFESSOR DONDERS.—Professor François Cornelius Donders, one of the most distinguished oculists that ever lived, died at The Hague on March 24th, aged seventy. He was born in Tilburg, Brabant du Nord, May 27, 1818. He was graduated from the Military Medical School of Utrecht, of which he soon afterward became a professor. He retained that position only a short time, as he accepted the chair of Physiology and Histology in the University of Utrecht. He devoted himself particularly to diseases of the eye, and wrote many articles upon his favorite subject for European scientific periodicals. In 1863 he obtained a grant from the Government sufficient to build and equip a physiological laboratory. He was made a correspondent of the Paris Academy of Medicine in 1873, and of the Paris Institute in 1879. Fuller details of his life and work will be given later.

A NEW TREATMENT OF ANEURISM.—The Glasgow correspondent of *The Lancet* gives an account of a demonstration by Dr. Macewen of a new method of treating aneurisms. Needles are passed into the sac in such a way as just to touch the lining of the opposite wall. The oscillation of the needles causes a succession of fine scratches "on the inner surface of the endothelium, irritating it slightly and leading to the proliferation of leucocytes," which develop into a white, fibrous mass.

CHLOROFORM AS AN INTERNAL REMEDY.—Dr. Stepp of Nürnberg, noting the observations of Salkowski on the disinfecting power of chloroform water, determined to make trial of chloroform internally in a considerable number of diseases. It may here be remarked that the use of chloroform in aqueous or spirituous solution is less common in Germany than in this country, where the familiar so-called "æther chlor." forms a portion of a very large number of prescriptions. In gastric ulcer, Dr. Stepp gave chloroform (fifteen grains in a five-ounce bismuth mixture) with great effect, and believes this to be due to its disinfecting, astringent, and stimulating properties. In various affections of the mouth and throat—as follicular pharyngitis, catarrh of the pharynx, gingivitis, and diphtheria—washes and gargles containing chloroform proved very beneficial. In one case of severe psoriasis of the mucous membrane of the mouth, which had been unsuccessfully treated by several medical men, chloroform water effected a complete cure. Two cases of pneumonia, treated with chloroform, did so well that Dr. Stepp means to make a further trial of it in this disease. Perhaps the most encouraging results were obtained in cases of typhoid, though only six of these were thus treated.—*The Lancet.*

NAPHTHOL AND CAMPHOR IN TUBERCULOUS ULCERATIONS.—At the Société de Thérapeutique M. Feuret spoke on the treatment of tuberculous ulcerations by naphthol and camphor. Two parts of camphor to one of the naphthol form a syrupy mixture of easy application; the ulcerations are touched by means of a brush, and they quickly assume a healthy appearance. A few cases of diphtheritic ulcerations were successfully treated by the same application.

THE best process of embalming, according to the *Medical Press and Circular*, is called the "Brunelli process." The circulatory system is cleansed by washing with cold water till it issues quite clear from the body. This may occupy from two to five hours. Alcohol is injected so as to take out as much water as possible. This occupies about a quarter of an hour. Ether is then injected to abstract the fatty matter. This occupies from two to ten hours. A strong solution of tannin is then injected. This occupies for imbibition from two to ten hours. The body is then dried in a current of warm air passed over heated chloride of calcium. This may occupy from two to five hours. The body is then perfectly preserved and resists decay.

ANTIPYRIN IN CHOREA.—Professor H. C. Wood highly lauds antipyrin for chorea; in some cases he has been able to secure complete cessation of the convulsive movements inside of a week, or at most two or three, while the average duration under arsenic, etc., is from sixty to ninety days.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OPHTHALMOLOGY AND AURAL SURGERY.

Stated Meeting, February 18, 1889.

OREN D. POMEROY, M.D., CHAIRMAN.

DISCUSSION ON CATARACT.

DR. HERMAN KNAPP opened the discussion with a paper. At the Seventh International Ophthalmological Congress, 1888, of two hundred and fifty members only five warmly advocated extraction of cataract without iridectomy. It seemed time to base the discussion of this question on experience rather than on argument. His own experience was given before forming conclusions. He had already published a series of 117 cases of extraction, only 17 of which were with iridectomy. The present paper contained a series of 113 cases, 100 without, and 13 with, iridectomy, operated upon between the spring of 1887 and December 29, 1888. He had made some changes in the technique of the operation. During a large experience with solutions of bichloride of mercury he had found irritative effects now and then from its intra-ocular injection in strength of $\frac{1}{10000}$, which had led him to abandon its use altogether for Pamard's solution, or more often, a three per cent. solution of boracic acid. The solution should be lukewarm, for when cold it was liable to cause sudden movement of the eye.

In about twenty-five cases he opened the anterior capsule with the knife on its passage through the anterior chamber, which was easily done when the anterior surface of the lens was convex and the pupil slightly dilated. But if the pupil were narrow the point of the knife might scrape the iris or engage in it on the opposite border, in which event it should be withdrawn until the iris became sufficiently disengaged, and then passed rapidly through the anterior chamber. But a section in this manner was evidently more difficult than when the knife remained in its original plane. In the operation just described, the advantage of the narrow Graefe knife was demonstrated better than on any other occasion. Collision with the iris and undesirable counter-puncture could be easily corrected, but thus far he had not exsected a piece of the iris by opening the capsule in this manner. The method was old, but had lately been revived by Galezowski and others.

Dr. Knapp recommended the continued use of the upper section, not only on account of its operative advantages, but also on account of the better chances which it gave of preventing collapse of the iris and escape of the vitreous. When the eye looked forcibly down the section gaped, and he, therefore, made it a rule to avoid downward position during the whole manipulation, but especially during the readjustment of the iris and washing out the anterior chamber, lest the iris and vitreous fall into the gaping wound. He also cautioned the patient, while bandaged, not to look down to his feet, but to hold the eyes up in the position of repose during sleep. In three of the cases there was escape of the vitreous. He had been very careful in cleansing the pupillary area, yet in a few cases a moderate amount of membrane was left, but good sight was obtained in all.

In one case acute mania disappeared in a day after the eye had been left without the bandage. In one case the eye not operated upon contracted an intense epidemic acute conjunctival catarrh on the fifth day, but careful bandaging kept the inflammation from the opposite eye. There was death from complication in one case, nine days after a normal extraction and undisturbed recovery therefrom. In one case of hypermature cataract in a man thirty years of age, on the thirteenth day of recovery, the opposite half of the visual field became defective, the defect being caused by intra-ocular hemorrhage. It slowly disappeared in the course of three months. There was posterior synechia in many cases, all filiform, and did not materially obstruct the pupillary area. There was gelatinous exudation in two cases, recovery good. The pupil was slightly oval in a few cases. Incarceration of the iris, anterior synechia in two cases, but no disturbance of vision. In six cases there was prolapsus of the iris. In the fifth of these an inordinate quantity of corrosive sublimate, $\frac{1}{10000}$, had been injected, resulting in pain the entire night, and final loss of the eye from iridocyclitis. In his first series of 100 cases without iridectomy, prolapsus of the iris occurred in 12 cases; in this series only in 6, and of this number 5 occurred in the first 50, and only 1 in the second 50. He felt convinced from recent operations that secondary prolapsus of the iris, just as secondary hemorrhage into the anterior chamber, was of traumatic origin in almost all cases, if not in every one. Its prevention depended on careful nursing. Carrying the hand to the itching eye, doubtless, had often been the cause of accidents. Dr. Knapp thought that complications of simple cataract extraction could be reduced almost entirely to accidents. Galezowski believed that prolapse was mostly produced by premature opening of the eye by the surgeon. Since he kept the eyes closed for six days he had had no more herniæ.

Of Dr. Knapp's 100 cases there had been complications of the cataract in 13. Expressing the results as to vision in the customary manner, primary S. was good in 91 cases; moderate in 8; failure in 1. Ultimate S., good in ninety-seven per cent. of the cases; moderate in two per cent.; and failure in one per cent. Comparing the primary and ultimate vision in his tables, the difference was great. In the column of primary vision there was not one case with S. 20–20, while in the second column, that of ultimate vision, there were 30 cases with S. 20–20, and the moderate results had been reduced from eight per cent. to two per cent. The cause of the gain in ultimate vision was subsequent division of the capsule, which was done in 74 cases. It would have been done oftener had he not included recent cases in his statistics. In none of these cases was vision rendered worse.

His tables showed primary vision one-fourth the normal standard, while the ultimate was fifty-seven per cent. When it was remembered that a number of cataractous eyes were otherwise diseased, this result seemed remarkable, and the conclusion was that simple extraction was both the best and the safest method of removing cataracts.

DR. GRUENING continued the discussion, and said that when he first saw this method employed in Paris, 1885, he was struck by the fact that, after the operation the eye looked much different from its appearance after his own method of operating; the wound was hardly visible, the pupil was central. He also then saw injections made into the anterior chamber, but he had long before that been accustomed to inundate the eye with a saturated solution of boric acid after cataract operations, and thus, with gentle manipulation, could remove the diluted cortical masses quite easily. On his return he began to extract cataracts without iridectomy, and had now succeeded in 36 cases, while in 12 the iris had to be cut. At first he used a four or six per cent. solution of cocaine, and instilled it into the eye fifteen minutes before the operation which he thought had an unfavorable influence and made prolapsus of the iris more likely to occur. He had, therefore, changed to a two per cent. solution, and began cocainization five minutes before operating, which produced sufficient anæsthesia. After the operation he instilled a few drops of a six per cent. solution of cocaine, which did more to prevent prolapsus than esserine. He did not like to perform a secondary operation if it could be avoided. It was possible to remove a hypermature cataract with the capsule.

Dr. Gruening did not favor the method of making section of the cornea and of the capsule together. It was

necessary to change a very simple section or operation into a very complicated or difficult one. As Dr. Knapp had described it, it was necessary to move the knife in three different planes. But he had not yet seen the operation done. He did not any more dread the cystotome, since it was his custom to boil all his instruments before using them. In conclusion he placed himself among those who were advocates of the simple operation. He had performed it a good many times, successfully in all. Although he had been obliged to cut the iris twelve times, the patients did well.

Dr. David Webster had done the simple operation in all cases, with a few unavoidable exceptions, for two years. He liked it much better than the operation he had employed previously, the modified Graefe. He always used the speculum, and preferred Graefe's right and left; the fixation forceps were applied at the lower margin of the cornea, pushing down a little before cutting; he preferred the Veis knife, with which the danger of the iris falling before the instrument was reduced to a minimum. It happened to him in only three cases out of forty-two. Before beginning to operate it was extremely important to turn over the lids and wash off the palpebral conjunctiva very thoroughly. He employed Pamard's fluid, but he was not sure that sterilized water was not as good. He also washed the lids, brows, and cheek. He stood behind the patient, who was reclining, and operated on the right eye with the right hand, and on the left eye with the left hand. He generally used a two per cent. solution of cocaine in hospital practice, four per cent. in private practice. Put it in twice, and long enough before the operation to dilate the pupil one-half. An important point was to have the middle of the wound brought out under the conjunctiva, so as to have a conjunctival flap. If brought out in the cornea there would be, in a large proportion of cases, a grooved wound, the inner part next the anterior chamber healing first; and the external part becoming covered with epithelium, as it should, there resulted practically an ulcer of the cornea, which might retard the healing for weeks. He had never lacerated the capsule with the knife by going through. Like Dr. Gruening, he did not fear to put the cystotome into the eye after boiling. In two of his cases there was incarceration of the iris. The number of males and females was about equal. The result in one case was only perception of light; in another, perception of fingers, since improved. In 1, V. 22–100; in 3, V. 20–100; in 9, V. 20–70; in 6, V. 20–50; in 8, V. 20–40; in 6, V. 20–30; in 4, V. 20–20; in 2, V. 20–15; in 1, V. 20–10.

Dr. C. S. Bull had nothing but a favorable account to give of simple extraction without iridectomy. The past three years he had done it eighty-one times. In none had there been prolapsus of the iris after the operation. He had already published thirty-six of the cases. In the first thirty he did not get incarceration of the iris once, but in the next six it occurred every time. Out of the eighty-one cases there had been incarceration twenty-one times, in all of which the primary effect upon the pupil was a dislocation upward; in some it subsequently changed in shape. He carefully cleansed the face and eyes before the operation. He used a knife much narrower than the original narrow knife of Graefe. The entire length of the incision was within the cornea. He always endeavored, at the same time, to do capsulotomy. He was quite careful to extract all soft lens matter, however long it might take. If it could not be done by counter pressure, he irrigated the anterior chamber with boric acid solution. He had used Pamard's solution, but not enough to say whether he believed in it as an antiseptic. He used eserine after the operation; and after dressing the eye, if no special cause arose, did not disturb it for three days. The iris, if it became prolapsed, usually reduced itself, but in no case had he had prolapsus subsequent to the operation. He had had eight cases of prolapsus of the vitreous, but in none loss of the eye. He always operated with the patient in the bed to be occupied afterward. He believed posterior synechia was frequent, but the adhesions had never been broad. He used a weak solution of atropia in such cases. He did after operations probably as often as did Dr. Knapp, and was not content even when vision was pretty good. He had operated in two cases of long-continued iridocyclitis with good result, vision in one being 20–30. He could not say that he was nearer deciding on the contra-indications to the simple operation than he was a year ago. The principal advantage of this operation was preservation of the natural appearance of the iris; there was also a good deal better eccentric vision; there was more rapid healing of the wound than after the operation with iridectomy. There was probably better resultant vision in the end, and the possibility of particles of the capsule or lens matter becoming incarcerated in the wound was reduced to the minimum. But the technique was more difficult, the extruding of the lens was more difficult, the iris was more likely to be bruised in the passage of the lens, possible iritis was greater, prolapsus of the iris and vitreous more likely, also incarceration of the iris; and there was greater difficulty of cleansing the pupillary area after the lens was extruded than when iridectomy was performed. The most important contra-indication to the simple operation was a rigid, unyielding iris, which probably could not be determined before operating. He would continue the simple operation.

Dr. Gruening, in correcting a false impression left by his remarks, said that he was not in the habit of extracting the lens with the capsule. He meant only to say that he was in the habit of attempting to do so in hypermature cataracts, and usually succeeded.

Dr. D. B. St. John Roosa mentioned his experience with the different forms of cataract extraction, commencing with his studies under Alt and Von Graefe in 1862. The profession was now coming round again to the simple operation without iridectomy then performed, and Schweiger was even using Beer's knife in the simple extraction. His own experience with cataract extraction now covered over two hundred cases. With regard to extracting the lens in the capsule, he employed this method in every possible case for two years—not by the method of Pagenstecher, or that advocated a hundred years ago, but in attempting to dislocate the lens after section, and causing it to emerge by pressure and counter-pressure. Taking the cases altogether, he thought it was a fairly good operation, but it was more difficult than simple extraction, and for that reason he had, for the present at least, abandoned it, and he now operated by simple extraction, which, in spite of the difficulties which attended it or any operation, was to him the simplest of any he had undertaken. He had no desire as yet to return to Beer's knife. A few days before, taking the advice of Schweiger, he made downward section, and probably would lose the eye, which he believed would not occur had he made upward section.

The flap was on the transparent cornea, healing very well, when on the third day the inverted lower lid, which he so often encountered, pressed directly on the line of the flap and set up a suppurative process which was likely to destroy the eye. The dangers of simple extraction were exactly as Dr. Bull had stated them, but after all it required less manipulation than the Graefe extraction with iridectomy. With cocaine we were able to practise massage in such a way as to get out the cortex as we did not dare do before. As to the advantages of a round pupil, he had always thought they were over-rated. The operation which would save most eyes with useful vision was what the surgeon sought. He did not believe, however, that an ironclad rule could yet be laid down in favor of doing the simple extraction in all cases. He believed there were still cases in which, after making section, it would be decided best to extract with the lens in its capsule, and in other cases do iridectomy.

Dr. Roosa referred to the question of heredity, and said that three weeks ago he operated for removal of

cataract on the fourth member of a family consisting of father, daughter, two aunts, and an uncle, who had cataract. He also had removed a cataract from the father and two sons of another family, and a fourth died before the time set for an operation.

Dr. Roosa thought the mechanical influences interfering with the healing of the flap and causing suppuration were sometimes overlooked, especially rubbing the eyes with the hands.

THE CHAIRMAN remarked that the danger of catching the iris on the knife was much greater when the narrow one was used than when Beer's knife was employed, and he asked Dr. Roosa why, since we had the old operation of simple extraction without iridectomy back again, not use the old knife?

DR. ROOSA said he had not used the Beer knife for seven or eight years, because it was more difficult to manipulate than the narrow knife.

DR. VALK read some remarks, and described a method he had employed for overcoming mechanical interference of the iris with exit of the lens. An ideal operation would be to remove the lens in the capsule, without iridectomy. It had occurred to him to overcome the mechanical interference of the iris by drawing it back behind the lens as extraction proceeded, and with this end in view he had had made instruments called iris retractors. They were about the size of ordinary iris forceps, with small, smooth knobs on the ends of the blades, which caught and held the iris backward and downward as the lens passed outward. Then the iris was easily released, and returned to the normal position. He first used it in 1887, and had employed it in all cases since, no matter what the condition of the lens, and with perfect satisfaction. He could not say that it seemed to produce irritation of the iris. He had employed it about twelve times. Dr. Keiser, of Philadelphia, had expressed satisfaction with the method in the few cases in which he had employed it.

DR. FERRER, of San Francisco, said he had the past three years done simple extraction without iridectomy in twenty-eight out of over sixty cataract operations. In the twenty-eight cases prolapsus of the iris occurred in none, a fact due possibly to operating only when the patient was in the bed afterward to be occupied constantly six or seven days. He kept the bandage on the wounded eye nine days. He never injected the anterior chamber. His first experience with corrosive sublimate was bad, both eyes being lost. He now used a solution of boracic acid. Out of sixty cases he had lost but one eye from suppuration.

DR. G. F. CAREY had performed nineteen cataract operations, fourteen were modified Graefe's, the remainder simple extractions. The resulting vision had been good, and in two had been 20-20.

SECTION IN OBSTETRICS AND GYNECOLOGY.

Stated Meeting, February 28, 1889.

H. T. HANKS, M.D., IN THE CHAIR.

AN ENCEPHALIC FŒTUS.

DR. MABBOTT presented a male fœtus, born at full term, weighing six pounds and a half, normal in development except in the skull and brain. The head sat closely between the shoulders, the eyes seemed to project more than usual, the frontal bone rose a very short distance, when the top of the head became flat and retreated down to the neck posteriorly. Behind, there was an aperture about half an inch in depth and over an inch in its other diameters. At its bottom there seemed to be the rudimentary bones of the base of the skull. Another aperture, probably the foramen magnum of the occipital bone, filled with soft structure believed to be nervous matter, was located near its centre. It seemed possible one or more cervical vertebræ were absent.

The woman was confined January 29th, in an institution, and when the nurse reported that she was about to be confined, she said she expected something unusual, as she had noticed on examination that the fœtus would spring to the touch in a peculiar way. This indicated the convulsive movement from pressure observed in these cases and described by Charcot, and showed that at that time there was life. Dr. Mabbott saw the patient at a later stage, when life in the fœtus had become extinct. He was able at once to recognize the malformation by the touch.

The mother was a Swede, who was still nursing her last child when she became pregnant with this. During lactation she had suffered from alopecia areata, and thought, although there was no other evidence of the fact, that she might have contracted syphilis from her husband. Her husband had suffered from sunstroke, and subsequently from epilepsy. This fact, and that of having been strongly impressed by the sight of a man with a tumor on the face whom she had met in the street, made her fearful that her child would be marked.

DR. HANKS recalled a case seen by him some years ago, similar to the one described by Dr. Mabbott, except that the brain was more developed. There was absence of a part of the cranial bones as in this one. There was a tumor the size of an egg presenting, which when pressed upon caused the peculiar convulsive movements referred to, and which led to the opinion that it was the brain which was being pressed upon.

DR. JAMES R. GOFFE presented

A DERMOID CYST OF THE OVARY

removed on February 27th from a married woman, who had noticed enlargement of the abdomen over a year. The tumor grew rapidly, and the patient suffered from frequent attacks of peritonitis. On opening the abdomen extensive adhesions were found, the breaking up of which caused considerable hemorrhage. This was controlled by the Paquelin cautery. The tumor contained, in addition to the hair, and also teeth, usually present in a dermoid cyst, a great deal of sebaceous material. It had two compartments, and in one there was a large ball of hair, and a smaller ball in the other. The other ovary was diseased.

DR. W. GILL WYLIE remarked that dermoid cysts, in contradistinction to ordinary cystic disease of the ovaries, were apt to cause much pain, to be of slow development, to occur in women past the menopause, and to undergo suppuration unless operated upon when the pain became severe.

DR. MUNDÉ believed the arrangement of the hair seen in Dr. Goffe's case, that is, in large balls, was usual. But two years ago he removed a dermoid cyst which contained numerous round bodies, like small marbles, each one containing a single hair. They were floating about in the fluid, which amounted to several quarts. Dr. Welch examined them and said they contained sebaceous matter. He could not state why each one contained a hair projecting from the centre of the ball. There were only four similar cases on record. He had had one case in which the cyst was separated into two compartments, and the hair in one compartment was blond, while that in the other was black.

DR. CURRIER inquired of Dr. Wylie how he reconciled his opinion that cysts occurring late in life, especially after the menopause, were likely to be dermoid, with the fact that dermoid cysts were usually considered congenital formations.

DR. WYLIE thought the explanation easy. The germ that developed the dermoid cyst was probably present at birth, but remained latent until the menopause, and at that time, when certain atrophic changes took place, it began to develop. He repeated that in his experience with dermoids, which was large, they were likely to occur in older women, to be associated with pain, to be of slow growth, to have adhesions, and to undergo suppuration.

DR. MUNDÉ said that, according to his observation, there

were three events in woman's life likely to start the growth of dermoid cysts, namely, puberty, childbirth, and the menopause.

DR. G. T. HARRISON thought that Dr. Wylie's statement with regard to the developmental history of dermoid cysts was true of all tumors of the ovary, namely, that they were most likely to take place after the menopause.

DR. HANKS thought it would hardly be just to come to the conclusion that those who had passed the menopause were more liable to dermoid cysts than others. He had removed three, and had seen six or seven in Dr. Lee's service, and of these only two occurred in women who had passed the menopause. Yet he had no doubt that if the focus were present the menopause might start the development.

DR. WYLIE added that he had not seen enough cases to establish a rule.

THE SURGICAL TREATMENT OF RETROVERSION OF THE UTERUS WITH ADHESIONS, WITH A NEW METHOD OF SHORTENING THE ROUND LIGAMENTS.

DR. W. GILL WYLIE read the paper. Regarding the new method, in his own experience it was not new, as he had employed it for three years, and a modified form a longer time. He excluded from consideration those cases of retroversion with adhesions in which the tubes and ovaries were diseased, for the reason that usually they required removal of the appendages. Yet retroversion with adhesions almost always meant salpingitis, and this fact not having been recognized a few years ago, accounted for the trials of the gynecologist in the treatment of so-called cellulitis, and for the further fact that pessaries did little good. Indeed, often, where retroversion was combined with adhesions (usually salpingitis) the use of the pessary excited fresh attacks of peritonitis, formerly called cellulitis, and did much harm. But there was a certain number of cases where the uterus was held in the retroverted and fixed position by peritoneal adhesions, which did not involve to a serious extent the tubes and ovaries, and it was in that class of cases that he proposed to describe and recommend a simple treatment after the abdomen was opened. Where the adhesions were at all extensive the only possible means of reaching an exact diagnosis was by opening the abdomen, yet he did not recommend laparotomy until other measures to remove the symptoms had proven fruitless. He had held for many years that displacement of the uterus did not constitute disease; that it was the result, rather than the cause, of disease. He had also maintained that adhesions *per se* were not a disease. They were the means by which nature attempted to repair the effects of the disease or shut off extension. The adhesions caused pain only when connected with some diseased organ, or when they interfered with the circulation of some other organ. In the class of cases under consideration endometritis was the disease commonly present, and to cure this it was necessary to secure drainage for the secretions, to stretch the adhesions in order that the uterus might have a certain degree of mobility, and not to interfere with the function of the bowel, or to break them up entirely after opening the abdomen, and then shorten the round ligaments. But forcible means of breaking up the adhesions should never be resorted to before opening the abdomen, as it was then alone that one could feel certain of what he had to deal with. The patient should be kept quiet as long as any fever was present. The uterus could usually be lifted by the finger without the use of much force. Fixation from exudations about the broad ligaments was usually less firm than when the adhesions were attached to the fundus. A pessary was likely to prove intolerable, and in its stead he employed the boro-glyceride pledget of cotton, which, in a few weeks, was likely to bring about involution and render the uterus more movable, and enable him to treat the endometritis by dilatation, drainage, and, if indicated, the use of the curette. If this treatment were continued, and the tubes and ovaries were not diseased, it would usually result in cure. In many cases, however, a cure could not be effected in this way, and on opening the abdomen one would find disease of the tubes and ovaries, necessitating their removal. But in a certain number of cases laparotomy would show that no adhesions had existed, and Alexander's operation might seem indicated. Instead of the Alexander operation for shortening the round ligaments, and thus holding the uterus up, he folded each ligament upon itself (the abdomen being open) in such a way as to shorten it, pass sutures, and cause the folded surfaces lying in close apposition with each other to unite and prevent falling of the womb. He had performed this operation in several cases the past three years, and a similar one as long ago as six years. Its advantages over the Alexander operation were evident. Although he had described it on different occasions, he was led to bring it forward in this special way because it seemed not to have attracted general attention, and also because he had heard that Dr. Baer, of Philadelphia, who was present by his invitation, had lately been doing the operation, supposing it was original with himself.

DR. BAER, of Philadelphia, said that while he had lost much of his belief in the teaching of a few years ago with regard to the pathology and etiology of displacement of the uterus, he was not yet prepared to believe with Dr. Wylie that retroflexion of the uterus was not productive of symptoms. The uterus when turned upside down was not in the position intended by nature, and, therefore, should give rise to symptoms. Certainly the circulation could not take place through it as readily as when it was in the normal position. Even those who expressed a different view showed by their treatment doubt in their expressed belief, for they sought to restore the uterus to a normal condition, and asserted that thereby it would be restored to a normal position. Whether the patient got better because her condition, aside from the displacement, was improved, or because the womb was replaced, might be difficult to say, but he thought both had their influence on the result.

He agreed with what Dr. Wylie had said regarding his method of shortening the round ligaments, and thought it the most scientific, and certainly the most efficient way. Owing to the fact that he believed displacement in itself might give rise to symptoms, he went a little farther, and said he thought laparotomy was sometimes justified for the single purpose of shortening the ligaments and retaining the uterus. In the Alexander operation there was possibility of not finding the ligaments, and after its failure one would be under the necessity of doing laparotomy.

As Dr. Wylie had said, in nine cases out of ten, or not so large a proportion, laparotomy would prove ovarian and tubal disease to be present, necessitating the removal of those organs; but in a few cases one would find that shortening of the round ligaments in the manner described would prove useful, and would take the place of Alexander's operation. It would seem to be as safe as the latter operation, for none of the patients so operated upon had died.

DR. P. F. MUNDÉ had not done Dr. Wylie's operation, but all had probably felt in some cases of retroversion or retroflexion need of something more than the old treatment, of something besides pessaries to retain the womb in position. Yet he had found the pessary of a certain amount of benefit, particularly the Thomas stem pessary with abdominal support. This had even effected a cure of the retroversion in some instances. He was quite in accord with Dr. Wylie regarding the necessity for his operation of shortening the round ligaments in the few cases to which he restricted it. Time, however, would determine whether this, the Alexander, or some other method would prove the best. While he had been a great believer in Alexander's operation, he admitted there were certain elements of doubt in it. It was not indicated at all in the class of cases calling for hysterorrhaphy. The objection to it was not, he thought, that the liga-

ments could not be found, but that in some instances they could not be drawn out. Regarding symptoms produced by backward displacement, he was inclined to agree with Dr. Baer rather than with the author. While he was an advocate of pessaries, it was not for the cure of displacements, nor would they always take the place of one of the operations referred to. Dr. Wylie's operation, if the benefit should prove permanent, possessed certain marked advantages over hysterorrhaphy. The latter fixed the uterus to the abdominal wall, and was also liable to be followed by intestinal strangulation.

Dr. George T. Harrison said that retroflexion was a pathological state, and that no woman could have good health for any length of time who had a retroflexed uterus. Every case required treatment. It was claimed that Alexander's operation restored the uterus to the normal position, but this was not so; it converted a retroflexion into an anteflexion, and when it was thus fixed forward there was interference with the normal excursions of the organ, which was objectionable. This was particularly true of hysterorrhaphy. He had little doubt that a good many of the women so operated upon would have bladder trouble, and perhaps trouble also if pregnancy occurred. Therefore it was a matter of congratulation that there was a method at hand by which the physician could cope with almost all cases of retroflexion complicated by perimetric adhesions, that was massage. He did not refer to Brandt's method, for he knew little about it, but that which had proved successful in his hands for years. In addition, pessaries were employed, giving the relaxed muscles (ligaments) an opportunity to regain their contractility.

Dr. A. F. Currier thought that in some cases displacement backward might exist for even months and not be attended by symptoms, while in others engorgement ensued, necessitating treatment. A third class of cases was that where displacement had existed for a long time, and caused atrophic changes in the uterus, a condition which was incurable. In backward displacement the broad ligaments were folded upon themselves, their surfaces became adherent, thus there resulted four layers of peritoneum adherent to each other, and to overcome such adhesions great caution should be exercised. He mentioned a case which he treated by Schultz's method with unsatisfactory results. Regarding the use of pessaries, he believed they would cure some cases, more particularly in unmarried women. Alexander's operation, Wylie's, or hysterorrhaphy, had their indications, but should never be performed except by a surgeon of some experience.

Dr. Hanks said, regarding operative procedures for replacing and retaining the uterus, that he would as soon have laparotomy, followed by Wylie's operation, or hysterorrhaphy, performed upon those dearest to him as Alexander's operation, so far as risk was concerned, while the curative results would be more certain. He knew of two cases where, after fixation of the uterus to the abdomen, pregnancy progressed without hinderance. Pessaries would cure in some cases, and he thought that when the uterus remained in position a year without support, and then again became retroverted, it should be considered a recurrence, just as a second attack of pneumonia some time after the first was a recurrence, the first attack having been cured.

Dr. Wylie, in closing the discussion, said he did not bring his operation forward for use where the pessary combined with other treatment would cure the case. He did not recommend it for the cure of diseases of the uterus, but the endometritis could be treated better with the organ in corrected position. This method and the pessary only removed one of the incidents and not the disease. So far as massage treatment was concerned, he employed this in the preparatory treatment, but it was not sufficient in all cases. Dr. Currier had spoken of the broad ligament being folded upon itself and adherent. He thought that in such cases laparotomy would prove the true condition to be one of salpingitis. He believed the question of mobility in the uterus was more important than that of position. Raising the organ made it more mobile. He had seen no trouble with the bladder following his operation.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE TREATMENT OF CONFIRMED CATHETER-LIFE BY THE FORMATION OF A PERMANENT PERINEAL FISTULA—A REMARKABLE CASE OF FRACTURE OF THE SKULL, WITH CEREBRAL ABSCESS—A PROPOSED DENTAL SECTION AT THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION—A NEW DEPARTURE AT THE MIDDLESEX HOSPITAL — PROPOSED COMPULSORY NOTIFICATION OF INFECTIOUS DISEASES.

London, March 9, 1889.

A noticeable feature of our medical meetings is their tendency to assume more of a cosmopolitan character. It is now by no means infrequent for a London physician or surgeon to bring a communication before a provincial medical society, and, conversely, it is becoming increasingly common to meet with practitioners from the provinces, or even more distant parts, at our metropolitan gatherings. Thus, on Monday evening last, at the Medical Society of London, the first paper was read by Mr. Walter Whitehead, of Manchester, whose name is probably familiar to your readers in connection with the method of removing the tongue which is named after him. On the present occasion, however, a different branch of surgery occupied Mr. Whitehead's attention, the subject chosen for his paper being "The Treatment of Confirmed Catheter-life." The formation of a permanent perineal opening was advocated. The author said he had found this plan to be very effectual; he also believed it to be novel as applied to the advanced stages of prostatic obstruction. The operation performed did not differ materially from that of an ordinary median lithotomy. The originality commenced with the after-treatment. An India-rubber tube was passed through the opening made into the membranous urethra and allowed to remain until a sufficient time had elapsed for the fistulous communication with the bladder to become cicatrized. The tube was then no longer worn continuously, but the urine was withdrawn through the fistula at intervals by means of a catheter.

When cystitis coexisted with enlarged prostate the bladder should always be irrigated before withdrawing the catheter. By this method of treatment the bladder could at pleasure be completely relieved of its contents, a permanent channel was provided through which a perfect could be substituted for an imperfect method of washing out the bladder, and six inches of the most sensitive part of the urethra escaped the irritation produced by the passing of a catheter in the ordinary way. By allowing the opening to remain permanently patent, relapses were avoided. The author further claimed that by this method all the inconveniences attending enlarged prostate were permanently arrested without incurring the risks of a really serious operation.

Sir William MacCormac said the direct approach to the bladder would certainly relieve many of the distressing symptoms, but asked whether such patients were not still liable to attacks of difficulty of micturition in consequence of obstruction by the middle lobe of the prostate. Mr. Buckstone Browne spoke in favor of the suprapubic operation. He said an operation similar to that described had been performed for years, and he questioned the assertion that a permanent fistula was seldom or never met with unless expressly provided for. In his experience fistulæ commonly resulted from the central incision, and it was difficult to get them to heal. He had also seen septicæmia, hemorrhage, and even death follow the perineal

incision. Mr. Buckstone Browne's vigorous attack was followed by a few words from Mr. Bernard Pitts, who observed that the cases were so disappointing that all suggestions as to treatment were welcome. He had performed perineal urethrotomy in two cases of enlarged prostate, but both patients died in a few weeks from exhaustion. He did not think, though, that the dangers alluded to by the previous speakers were to be apprehended if the incision were kept in the middle line. The suprapubic operation had the advantage that it enabled a more radical procedure to be adopted if necessary, and it was certainly the best in cases of vesical tumor. Mr. Whitehead then replied, and said the prostate was a mysterious body, symptoms being sometimes present where it was normal or even smaller than usual. He had done the perineal operation two or three hundred times, and only once had he met with an intractable fistula as the result. With the suprapubic operation an instrument had to be worn in the opening, and simply served as an overflow pipe which could not readily be controlled; the perineal opening required no instrument to be constantly worn, and patients had no difficulty in holding their urine for four or five hours, while it could be drawn off with a short tube when necessary.

Mr. J. H. Morgan, surgeon to Charing Cross Hospital, then related a somewhat unusual case of compound comminuted fracture of the skull. A boy, nine years of age, sustained an injury to his head causing a scalp-wound at the apex of the right parietal region. A small portion of bone was exposed, but no fissure could be seen. There were symptoms of severe concussion, and on the fourth day a convulsion occurred, followed by paralysis of the right arm and leg. The scalp was then exposed and a piece of bone was found depressed, situated two inches from the middle line, vertically above the right ear, and at a distance of an inch and a half from the original scalp-wound. Thick pus exuded through the torn dura mater from an abscess-cavity in the region of the right ascending parietal convolution. The bone was elevated and the abscess emptied; the unhealthy granulations lining its cavity were removed by scraping. Several convulsions occurred in the course of the next few days, in which the face, abdomen, and right extremities were affected; but these diminished in severity, and ceased altogether by the fourth day. Hernia cerebri seemed to be threatened at one time, but the granulations shrank to a level with the scalp, under the free use of iodoform. The paralysis gradually disappeared, and there was now no sign of weakness in the arm or leg, the boy being perfectly well.

It is proposed to have a Dental Section at the Annual Meeting of the British Medical Association. The success which could be achieved by such a section is, however, somewhat problematical. Only a small minority of dental practitioners possess medical as well as dental qualifications, and the present constitution of the British Medical Association does not allow of the election, as members, of others than those qualified to practise in accordance with the medical acts. I am afraid, therefore, that the attendance in the proposed section would be somewhat limited.

A new departure is about to be taken at the Middlesex Hospital. The committee have determined to establish an out-patient department for diseases of children, and an additional assistant-physician is to be appointed to take charge of it.

It is stated that the Government are about to bring forward a bill to render the notification of infectious diseases to the authorities compulsory on the part of the medical attendant. Such a system is at present only in force in a few localities, where it has been brought into operation under local acts of Parliament.

THE MILLS OF THE COLLEGES grind swiftly but exceedingly coarse.

ON THE USES OF ELECTRICITY IN MEDICINE.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: That a reaction from the old-time credulity of the profession in regard to electro-therapeutics is taking place, the discussion at the last meeting of the New York Academy of Medicine shows.

The enthusiasm which formerly swayed the multitude was imported from France and Germany, and now the ebb of the tide which lays bare the foundation-stones of electro-therapeutics, one of the gentlemen discussing the subject the other night would have us believe, has started from England.

Dr. Starr credited Gowers with being the first to express in print, in his very recent book on nervous diseases, ultra-conservative views on electro-therapeutics. As a firm believer in American common-sense, I protest at any such statement. That some of us eagerly swallowed the Continental bait ten or twelve years ago, I must admit, but that it has taken us twelve years to find out we were sold, I deny. Some of us at once set ourselves to personally and experimentally prove the correctness of the stupendous claims made by Continental electro-therapeutists, with the prompt result of finding most of them a lot of bubbles.

In the spring of 1884 I collected in book form some lectures on electro-therapeutics,[1] which I had been delivering for three years, with other lectures on therapeutics in the Woman's Medical College of the New York Infirmary. A part of its preface runs thus: "This little book is presented to the medical public chiefly as a protest against the mysticism and charlatanry which have ever hung around the literature and practice of electro-therapeutics. . . . Its (electricity) showiness, its instantaneous and startling physiological effects, and its name, popularly synonymous with life, have long made it, and will long continue to make it, a fashionable remedy, a cure-all for imaginary diseases, a popular placebo, a gold mine for charlatans and symptom-treating physicians, who let their patients make the diagnosis and suggest the treatment.

"Never does the question, 'Was my patient cured, or did he get well?' arise so often as in the practice of electro-therapeutics; other remedies are so often simultaneously employed, the treatment, as a general thing, extends over so many days or months, and so much allowance must always be made for the effect of expectant attention."

On p. 62, in commencing the therapeutic part of the book, will be found the following words: "By far the most brilliant curative results brought about by electricity depend wholly on its power to excite muscular contraction."

Where treating of spinal diseases there will be found, on p. 71, these words: " . . . Electricity, applied externally, has very slight action on the healthy cord, and hardly any undeniable therapeutic effect on it when diseased." Again, concerning cerebral diseases, p. 76: "Electricity, as ordinarily applied to the head, is devoid of any curative power over tangible cerebral lesions."

"Contracture of cerebral origin is not very amenable to electrical treatment. . . . Relief, if any follows, is slight and delayed" (p. 80).

As to ocular paralyses, p. 81: "So frequently is this treatment combined with medication, and so slow, as a general thing, is improvement, that the real utility of the procedure is questionable."

Concerning spasmodic affections, p. 83: "Tonic spasms, depending on a cerebral or spinal lesion, are not very amenable to direct electrical treatment. . . . Attempts to reach the seat of the lesion by galvanizing the head and back yield no better curative results. A speedy and decided relief of a contracture of supposed spinal or cerebral origin, would lead me to doubt the correctness of the diagnosis."

Concerning the temporary relief of clonic spasms, p. 84: "A prolongation or repetition of this application,

[1] The Student's Manual of Electro-therapeutics. New York: G. P. Putnam's Sons.

however, is attended by no curative results." Concerning pain, p. 86: "Pains of a cerebral origin, or from disease of the spinal cord (as in sclerosis of the posterior columns) are not amenable to electrical treatment. When caused by acute neuritis also, other remedies are much more indicated. . . . Relief following electrical applications, in pain of obscure causation, often comes from expectant attention, as is proved by the magical effects which often follow the application of electrodes entirely devoid of electricity."

Concerning electrolysis and galvano-cauterization, p. 90: "They should supplant cleaner and more surgical procedures only when the site of the operation is too inaccessible for concise dissection or hæmostasis."

Though not advanced by a European, it would seem as if these ideas were conservative enough, particularly as they were taught and published at a time when everybody else was curing (?) with electricity locomotor ataxia, progressive muscular atrophy, pseudo-hypertrophic paralysis, glosso-pharyngeal paralysis, tetanus, torticollis, club-foot, aneurism, asthma, exophthalmic goitre, impotence, urethral stricture, epilepsy, melancholia, strabismus, and cataract. One thing which has bolstered up the reputation of electricity as a curative agent more than anything else, is the extraordinary and utterly fallacious way in which it gets all the credit for results often due to other treatment employed at the same time. Let us cite a few examples.

Says a recent writer[1] on medical electricity: "It is necessary in skin diseases to enforce the most rigid attention to diet, cleanliness, and bowel regularity, before doing anything else." Pretty good treatment for acne without electricity. Another[2] has cured three cases of epilepsy by a special application of the constant current to the brain, and *the administration of small doses of the bromide of sodium.* (Italics mine.) Another author[3] reports several cases of epilepsy cured (?) by the combined use of the *bromides* and *electricity.* (Italics mine.)

In a case of aortic regurgitation an observer[4] used "general faradization, daily applications, using extreme care over the cardiac region, as any sharpness of current was followed by faintness. *The only medicine employed was lily of the valley tincture.* . . . " (Italics mine.) Very numerous examples of such erroneous deductions could be cited. Another source of error is a failure to properly estimate the proportion of recoveries that take place spontaneously during a prolonged electrical treatment.

An author, speaking of the treatment of acne, says:[5] ". . . It is scarcely worth while to begin a case without some sort of assurance that treatment will be continued at least a year, steadily and faithfully." What changes will mere attention to hygienic details bring about in that space of time! Again, in a case of herpes præputialis the same author says:[6] "Applications were made daily, and after *twenty* the patient was discharged, cured." (Italics mine.)

The same author, with reference to heart disease, says:[7] "I have found daily applications essential to any kind of success, and at least three months' treatment necessary for relief."

The preposterous claims of cure made by some men can be charged to their dense ignorance, which is mirrored in their writings. As an example I refer the reader to the following case[8]: "Case III.—G. F. S——, a physician, in excellent general health, consulted me for a ptosis of the right eyelid. . . . He was also slightly myopic. The levator muscle was regularly faradized for two weeks, general applications of the same current to the ball being made by the electric eye-cup for the same length of time. He was then obliged to stop treatment by absence from the city, but the ptosis had very much improved, and *the myopia also.*" (Italics mine.) As though the shape of the eyeball could be permanently changed by faradism! The same author claims to cure cataract, while among other diseases which he treats with electricity are capillary bronchitis, acute phthisis, pneumonia, heart disease, angina pectoris, intercostal neuralgia, pleurodynia, hiccough, chronic gastritis, intestinal dyspepsia, rectal stricture, jaundice, and peritonitis. Should one care to study the humorous side of a very serious subject, in the writings of electro-therapeutists, he would find a very fertile field.

To exemplify a phase of the subject scrupulously avoided by writers and disputants, the following case[1] of asthma will furnish a text: "Case I.—S. T——, aged sixty-four, retired merchant, of hereditary asthmatic history, etc. . . . Treatment was commenced on the 17th of April, 1880, and continued for two months." (The treatment consisted in what the author calls "cerebral alternated with pneumogastric treatment.") "The paroxysms grew shorter and less severe, and the patient became able to take some interest in life once more. At this time, however, unfortunately, he became embarrassed in circumstances and was obliged to suspend (treatment). . . ."

How pregnant with meaning is this last sentence! Can it be that so potent an agent is good for the rich, but bad for the poor?

I will here make a statement which I have no fear anyone will honestly contradict: That ninety per cent. of electrical applications are made either through ignorance or avarice; the latter motive being by far the most common. There is no other way—unless it be the hypodermatic treatment of syphilis—whereby a patient can be induced to come to a doctor's office so often, so regularly, and for so long a time as to undergo a thorough "course of electricity." This knavery and humbuggery is rampant all over our land, and in any other profession or business than medicine would be branded as it deserves.

The indications for the use of electricity are just as plain and concise as are those for opium, aloes, or digitalis, and at some future time I should be pleased to present them, but the limits of a letter are already overstepped. Let me add to my readers these words of advice: Don't use electricity without knowing *why* you use it; don't use electricity as a placebo, it takes too much time and is too expensive; and last, but by no means least, don't use electricity simply to make money; it is unprofessional, and brings medicine into disrepute.

R. W. AMIDON, M.D.

NEW YORK.

A GOOD BREAD FOR DIABETICS is made from the gluten from the starch factories ground to a fine flour. In the ordinary method of manufacture the gluten is fermented out and lost, but lately efforts have been made to separate it out by machinery for sizing. The bread is made as follows:

One cup gluten flour; one cup best bran, previously scalded; one teaspoonful of baking powder; salt to taste; two eggs; one cup of milk or water.

To be mixed with a *spoon.* If the hands are used the result will be even more disastrous than in the making of ordinary bread. This bread is healthy, palatable, nutritious, and contains but 4.57 per cent. of starch, equal to 5.08 per cent. of sugar. The analyses were made by Dr. Charles Harrington.

I presume that this bread is practically the same as that described by Waltering (*Allgem. med. Central Zeitung*, August 4, 1888), whose article by accident did not come to hand till recently.—JOHN A. JEFFRIES, *Boston Medical and Surgical Journal.*

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[1] William F. Hutchinson, in the Medical Register, July 30, 1887.
[2] Niermeyer, in Week. v. h. Nederl. Tijdsch. v. Geneesk, 1888, II.
[3] A. S. Rockwell, in the Medical Register, March 26, 1887.
[4] William F. Hutchinson, in the Medical Register, July 23, 1887.
[5] Ibid., July 30, 1887.
[6] Ibid., August 6, 1887.
[7] The Medical Register, July 23, 1887.
[8] William F. Hutchinson, in the Medical Register, June 4, 1887.

[1] William F. Hutchinson, in the Medical Register, July 23, 1887.

New Instruments.

A NEW PALATE-RETRACTOR.

By ALFRED HINDE, M.D.,

CHICAGO, ILL.

During the last five years I have used a palate-retractor which for cheapness, simplicity, ease with which it is kept clean, and, above all, efficiency, excels any like instrument with which I am acquainted.

In cases where posterior rhinoscopy is impossible, from insufficient space between the velum and the posterior pharyngeal wall, and also in cases where the post-nasal space needs cleansing previous to local application, and again during the latter manipulation, a retractor is found to be a necessary instrument. The perfected instrument,

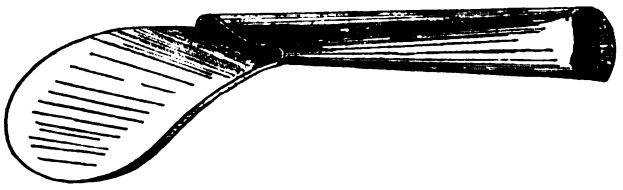
of which the above figure is a representation, is made in one piece, of steel, and nickel-plated. It consists of a handle, three inches long, with a shaft, five inches in length, terminating in an equilateral triangle, each side of which is half an inch in length. This triangular portion is bent upon the shaft at an angle of 75° to 80°. The first instrument I made out of an aluminum probe, in a wooden handle, but the too great flexibility of the metal impaired its usefulness.

A TONGUE-DEPRESSOR AND INSUFFLATOR.

By J. D. OSBORNE, M.D.,

NEWARK, N. J.

In writing a paper on "Diphtheria," read recently before the Practitioners' Club of Newark, N. J., I was led, both by my own experience and that of others, strongly to advocate the use of sulphur, both locally and constitutionally—locally, as prophylactic, and in the early stages and throughout the course of the disease, either in the form of sulphurous acid or in powder; and constitutionally, as sulphide of calcium, sulphurous acid, sulphite or bisulphite of soda, or the washed sulphur itself. Experimenting as to the best means of applying the powder to the throat, I was



led to construct this little instrument. It is a tongue-depressor and retractor and insufflator combined, and consists of a tube, eight or ten inches long, having attached to it an inverted spoon-shaped depressor, bent or folded somewhat on itself. The end of the tube covering the spoon is flattened and depressed in the centre, for the purpose of scattering the powder laterally on the tonsils as well as directly in front on the fauces. I first designed it for family use, and had it constructed of cheap material, nickel-plated, so that it can be sold by the druggists for twenty-five cents, when ordered by the physician. But I found it had a more extended possible use than I antici pated. It can be made better and of more expensive material, if demanded, for the use of the physician himself, both in his office and at the bedside. The bent spoon retracts the tongue, while its shape makes it glide over it with much less disturbance than the ordinary tongue-depressors; and being highly polished on the upper surface, lights up the upper part of the throat and posterior nares. It can be used by blowing through it with the mouth, or by any insufflator. The rectal tube of the universal Davidson's syringe fits sufficiently accurately into it, while its rubber tubing can be fitted over it, using a single pressure of the bulb to blow the powder. Any atomizer with projecting point will throw spray through it.

1034 Broad Street, Newark, N. J.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Meaical Department, United States Army, from March 17 to March 23, 1889.

Newton, Richard C., Captain and Assistant Surgeon. By direction of the Secretary of War the leave of absence granted in S. O. 272, November 21, 1888, is extended to include May 22, 1889. Par. 17, S. O. 64, A. G. O., Washington, March 19, 1889.

Newton, Richard C., Captain and Assistant Surgeon. His resignation has been accepted by the President, to take effect May 22, 1889. Par. 18, S. O. 64, A. G. O., Washington, March 19, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending March 23, 1889.

Farwell, W. G., Surgeon. Detached from the Receiving-ship Franklin, April 1st, and to the Naval Hospital, Norfolk, Va.

Marmion, R. A., Surgeon. Ordered to the Receiving-ship Franklin.

Ferebee, N. McP., Surgeon. Detached from the Naval Hospital, Norfolk, Va., and placed on waiting orders.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending March 23, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	8	0
Scarlet fever	394	50
Cerebro-spinal meningitis	1	1
Measles	161	15
Diphtheria	176	35
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

The Question of Puncture in Hydrocephalus.—At a meeting of the *Berliner Medicinische Gesellschaft*, Dr. Ehrmann presented a case of hydrocephalus, and raised the question whether puncture is beneficial or harmful. Professor Henoch, the specialist in children's diseases of the Charité, replied that he often—five and even six times in one and the same case—performed the operation of puncture and subsequent compression, and that he had never seen any injurious results proceeding from it. But at the same time he never saw any benefits from it.—*The Medical and Surgical Reporter.*

Fracture of the Symphysis Pubis during Labor.—In the *Annales de Gyn cologie* for October, 1888, Dr. Faux relates the case of a woman, twenty-five years of age, who had been in labor over forty hours at the time he saw her. The forceps were applied and delivery effected. When the head reached the perineum a cracking noise was heard, and this was repeated as the head was born. On the following day it was discovered that a separation of the pubic bones had taken place at the symphysis.

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Original Articles.

REMOVAL OF A TUBERCULAR TUMOR OF THE LARYNX BY LARYNGO-PHARYNGOTOMY, WITH DEMONSTRATION OF CASES.[1]

BY ARPAD G. GERSTER, M.D.,

NEW YORK.

THE object of this brief communication is twofold. *First*, I wish to contribute a rare instance of the successful removal from the larynx of a tubercular new growth, and, *secondly*, to bring to the notice of the profession a modification of the usual procedure, which tends to lessen the dangers of the operation itself, and diminishes the risks that arise during the time immediately following the operation.

Tuberculosis of the larynx is as well known as it is intractable. The ordinary appearances marked by diffuseness of the process need not be dwelt upon at present, as the object of this paper is rather to deal with one of the rarer forms of laryngeal tuberculosis, namely, that characterized by the formation of well-defined solitary or multiple tumors. Hennig, of Königsberg, says, in a paper published last year (1888), in No. 28 of the *Berliner Klinische Wochenschrift*, that, aside from his own case therein reported, only six additional instances of tubercular tumor of the larynx could be found laid down in medical literature.

Undoubtedly this form of the affection cannot be as rare as the paucity of reported cases would seem to indicate; yet it is rare enough to deserve the distinction of careful recording whenever met with.

Before entering upon the subject-matter of this paper, permit me to touch upon considerations that bear upon the question before us.

The appearance of strictly local tuberculosis is extremely rare, and its acceptance must be limited to those cases that owe their origin to direct inoculation. Most instances of so-called surgical tuberculosis are complicated, that is, mainly secondary to recent or old deposits in the bronchial glands or the lungs themselves. Extending experience in this field has taught me to look for and to find almost invariably signs of recent or old chronic trouble about the respiratory tract in patients suffering from some form of local tuberculosis.

In former days the presence of a pulmonary lesion accompanying a strumous local affection was accepted as a counter-indication to incisive operative relief. Within my own recollection cases are not few where surgeons declined to perform amputation for the removal of "carious joints," as they were called in those days, or refused to cut for fistula in ano on account of the presence of an active pulmonary process.

Fortunately, our views regarding the operative treatment of tuberculous affections have undergone a radical change for the better. We know that as long as the deposits are few and not too extensive, or complicated by acute and rapidly destructive suppuration, complete excision of one or more of the accessible foci will lead not only to local cure, but the elimination of these sources of pain and tissue-waste will also improve the general condition and power of resistance of the individual to such an extent as to be followed by self-limitation and more or less prolonged latency of the surgically inaccessible pulmonary affection. I herewith present to you, as an illustration of this statement, a patient who came under my care about a year ago in a state of great emaciation due to pulmonary trouble, complicated by tuberculosis of the left testicle and of the right knee-joint, both of these local conditions being far gone, and accompanied by the formation of abscesses. Castration and a rather extensive excision of the knee-joint, rendered very difficult by the presence of several large intermuscular abscesses, nevertheless resulted in cure of the local complaints, and also led to a limitation of the hectic, the profuse expectoration, the stitches in the side, and the general deterioration due to both the maladies and confinement. The patient, who was a hopeless invalid, is rejuvenated, and is working again at his profession as hard as ever.

Laryngeal tuberculosis, we must confess, rarely offers as favorable chances for curative interference as the instance here demonstrated. The closeness to the larynx of the lungs, the place from which, ever and anon, new infective material is brought up, to deluge the parts involved in the act of expectoration, renders multiple infection very common, and hence the most ordinary form of laryngeal tuberculosis is characterized by diffusiveness of the inflammatory changes due to the presence of the bacillus.

Nevertheless, we are gratified to be able to record brilliant achievements in the endolaryngeal therapy of tuberculosis, rendered much easier and more successful by the employment of cocaine and iodoform.

To return to our parallel, we now wish to state that occasionally laryngeal tuberculosis assumes a circumscribed character, causing here, as often elsewhere, the appearance of a tolerably well-defined tumor, and that by the timely extirpation of the swelling not only elimination of the destroying dyspnœa and dysphagia can be achieved, but that the general improvement of the vital conditions may occasionally be followed by an improvement of the causal, that is, the pulmonary trouble.

The history which forms the nucleus of this paper is as follows:

P. L——, compositor, a Russian Hebrew, aged twenty-nine, was admitted to Mount Sinai Hospital, October 14, 1888. He had been suffering from prolonged pulmonary catarrh since a number of years. In 1886 he swallowed a fish-bone, and felt some pain in the throat for a few days following. In June, 1888, he began to have pain in deglutition of solids; later on the swallowing of liquids was also causative of dysphagia, and recently the intense pain became complicated by increasing dyspnœa, hoarseness, and a racking cough. Has had some endolaryngeal treatment, which, however, failed to give him relief. On admission his general condition was fair, though anæmia was marked. Apical condensations and the usual symptoms of a chronic pulmonary catarrh were noted. Temperature, 99° F.; urine normal; respiration noisy, the inspiration being much prolonged. Laryngoscopic examination revealed a tumor of the size and shape of an unshelled almond, occupying the site of the left arytenoid cartilage and ventricular band, and overlapping the entrance to the larynx to such an extent as to preclude the examination of its interior. The surface of the tumor was smooth, pink in color, and seemed to be covered by somewhat hyperæmic, but otherwise normal, mucous membrane.

[1] Read before the Laryngological Section of the New York Academy of Medicine, February 26, 1889.

In view of the steady growth of the swelling, the dyspnœa, and dysphagia, its extirpation was determined upon and carried out on October 19, 1888.

Chloroform being administered, tracheotomy above the isthmus of the thyroid gland was performed, and my tampon-cannula was inserted and so adjusted as to prevent the entrance of blood into the trachea. The cricoid and thyroid cartilages were now longitudinally divided in the usual fashion, and it became evident that, although the tumor extended downward into the posterior extremity of the left vocal chord, its principal mass was somewhat higher up. To enable me to make a clean and thorough excision without any risk, I at once determined to extend the incision to the hyoid bone, and to add to it another one at right angles, carried outward through the thyro-hyoid membrane, parallel to the hyoid bone. This incision opened up the pharynx sufficiently to permit a complete removal of the entire swelling, leaving behind only apparently healthy tissues. A small portion of the posterior extremity of the left vocal cord, together with the arytenoid and a corresponding segment of the thyroid cartilage were also excised. Hemorrhage was kept down to a minimum by the careful employment of the usual surgical means, and the operation, though the tumor turned out to be much larger than anticipated, was finished easily and rapidly. The pharyngeal wound was closed with three rows of superimposed buried catgut sutures, the first or deepest stitches being passed close to but not through the mucous membrane. This part of the wound healed by first intention.

The laryngeal wound was treated somewhat differently. To guard against the dreaded infection of the extensive endolaryngeal wound, it was well dusted and rubbed out with iodoform powder, and firmly packed with strips of iodoformized gauze, the ends of which were brought out of the wound above the ordinary tracheal cannula, which had been substituted for the tampon-cannula. After the completion of this arrangement, six silk-wormgut stitches were passed from side to side through the walls of the external wound, one of them including the thyroid cartilage. These sutures, however, were not closed, but remained untied, their ends being secured by split shot. An external antiseptic dressing, which left only the aperture of the tracheal tube exposed, and the introduction of a soft œsophageal tube left *in situ*, completed the procedure.

The tumor, which I now have the pleasure of presenting, has somewhat shrunken in alcohol; but it is still as large as an unshelled almond, and somewhat caudate, the tail-like extremity corresponding to its anterior attachment near the epiglottis. The posterior club-shaped and was removed, together with a corresponding portion of the vocal cord and cartilage, which is visible in the specimen. The smooth surface of the tumor presented upward, and was the one seen with the laryngoscope. The under-surface is more or less ulcerated, and presented, while fresh, a large number of characteristic acuminations.

Dr. Cunningham, a member of the house staff of Mount Sinai Hospital, kindly undertook the microscopical examination of the specimen, and deserves much credit for the painstaking manner employed in his work. He also consented to kindly demonstrate his sections to the gentlemen present. In them all the characteristics of tuberculosis, namely, lymphoid structure and giant-cells, with tubercle bacilli, are easily discernible.

To resume our history, I will now relate that the first night after the operation would have been passed comfortably but for the presence of the œsophageal tube, which annoyed the patient to a great extent. In the morning the tube was withdrawn, and we found with much pleasure that the act of swallowing, though some what difficult, could be performed very well indeed. The thermometer registered on October 20th, the day following the operation, 101° F. The next day the temperature sank to the normal standard, and remained there ever since. October 22d, the packings and the tracheal cannula were removed from the wound, and the preliminary sutures were all closed. Under daily dressings the external wound united; but union of the thyroid and cricoid cartilages failed to take place, and a fistulous opening, corresponding to the lower portion of the thyroid cartilage, did not show any tendency to close up, in spite of careful local treatment. By the end of December the endolaryngeal wound had cicatrized over, only an indentation of the left vocal cord remaining to mark the site of the tumor. Swallowing had remained painless to this day, and, of course, the dyspnœa has also been removed. To close the persistent laryngeal fistula, a plastic operation was done under chloroform on January 4, 1889, the principle of which was based on Szymanovsky's plan of closing perineal fistulæ of the urethra. The essence of this excellent method consists in the superimposition of two semilunar cutaneous flaps over the fistula. Primary union took place, but, commencing from the middle of January, a rather ominous pulmonary catarrh, with copious expectoration, set in, and has made the patient lose much ground gained since the first operation. Lately, as you can see, a portion of the external cicatrix has become spontaneously ulcerated, presenting the characteristics of an atonic tuberculous ulcer; and also a small abscess developed in the jugular fossa, which, however, does not seem to communicate with the air-passages. Whatever may be the ultimate issue of the case, so much can be safely claimed, that an earlier excision might have accomplished just as much, if not more, than the operation performed in October; that thereby the distressing dysphagia and dyspnœa were successfully removed, which tracheotomy alone could not have accomplished; and that excision has inaugurated a decided improvement in the patient's general condition; that the extension of the pulmonary process cannot be justly charged to the performance of the operation; and, finally, that a prolongation of life, as well as a material mitigation of the sufferings of the patient, can be readily assumed to have been secured.

To complete my reference to Hennig's case, made in the first part of this paper, I may say that his patient was an elderly man, strongly addicted to drink, from whose larynx three tumors were removed by means of Paquelin's thermo-cautery after laryngotomy. They proved to be tubercular in character, and presented characteristics macro- and microscopically identical with those obtained in our case. The patient died of pulmonary trouble on the thirty-seventh day after operation. Post-mortem examination revealed extensive pulmonary tuberculosis and cirrhosis of the liver.

Before closing, I wish to present another patient from whose larynx a foreign body, presumably the fragment of a skewer, was removed by laryngotomy, December 24, 1886, at Mount Sinai Hospital. The foreign body had entered the larynx from the pharynx or œsophagus, there being a pertinent history in the case, and had caused the development of a peculiar, irregularly shaped tumor at the posterior commissure, the greatest portion of which I show you now, together with the foreign body, both having been extracted mainly from the sinus Morgagni of the left side. Perichondritis coexisting, the external wound had either to be kept open or an endolaryngeal tube had to be worn until June, 1887, when, after the discharge of a number of small sequestra, the endolaryngeal swelling subsided, and the patient ultimately recovered. Some hoarseness is observable in both of these cases, as a consequence of the removal of a portion of the phonating apparatus.

Degeneracy of the Profession.—Dr. Wilson maintains the degeneracy of the medical profession of the present day. He bases his views upon the difference in the respect paid the physician to-day, in comparison with that which was accorded him fifty years ago. He places the fault upon the physician himself, claiming that his methods of dealing with patients and brother-practitioners is such as is calculated to win the contempt of the laity rather than respect.

ANCHYLOSIS OF THE KNEE-JOINT AS A REMEDY FOR THE "DANGLE LEG" DUE TO INFANTILE PARALYSIS AFFECTING THE ENTIRE LIMB.

By STEPHEN SMITH, M.D.,

NEW YORK.

THERE is a class of cases, not unfrequently met with, in which infantile paralysis has so far crippled the leg that it has become nearly, if not quite, useless. In many cases the leg is a mere "dangle limb," of no service whatever, locomotion being accomplished by the sound leg and a crutch. As the child grows older the leg becomes more and more of an incumbrance, and at length the question of remedying the deformity must be determined. Various kinds of apparatus have been devised and employed for enabling the limb to sustain the weight of the body in walking. But such measures have not been satisfactory. Apparatus proves cumbersome, is frequently out of repair, and is cast aside as worthless. Amputation has been a favorite remedy of some surgeons. The point of operation has been just below or at the knee-joint. The purpose of this selection of the place of operation is to secure a stump that will take a knee bearing in the artificial limb. Such limbs prove very serviceable, and are infinitely preferable to the crutch and "dangle leg." But still there is, and always will be, the disadvantage of an artificial limb, with its frequent derangements and occasional renewals.

Several years since, I treated such a case by anchylosing the knee-joint, placing the leg in a nearly straight position, and the result was in the highest degree satisfactory. I have repeated the operation several times since, and have never failed to secure a useful limb. In the belief that this method of relieving the disability, due to the general atrophy of the lower extremity, resulting from infantile paralysis, may be of use, the following case, the first in the series, is given in detail. The case has already appeared in print, but not in a form to gain publicity. As an illustrative case I reproduce it.

CASE.—In 1878 a boy, ten years of age, came under my care, who had walked with a crutch since he was three years old. His special disability resulted from infantile paralysis affecting his left leg, which was flexed at the knee at about a right angle.

On examination it was found that this flexion was by paralysis of the quadriceps extensor muscle, which had undergone almost complete atrophy. Owing to the paralysis of this extensor muscle of the leg the flexor muscles, viz., the biceps flexor cruris, and the semimembranosus and semitendinosus, were most counteracted, and hence the leg had gradually been flexed upon the thigh until it assumed the position mentioned. Though the atrophy of the limb from the hip to the foot was extreme, the actual length was nearly that of the right leg, as ascertained by measurement, in its displaced position. The boy moved about very actively with a crutch (Fig. 1), the affected limb dangling helplessly about the crutch. The parents were very anxious to have him relieved, and, while urgent to have amputation performed, readily consented to any other remedy that would improve his condition.

The first operation consisted in division of the tendons of the flexor muscles with a view of straightening the leg at the knee. If this could have been done apparatus might have been employed to fix the knee-joint so as to enable the patient to walk with a stiff knee. Or a joint in the apparatus might have enabled him to walk with flexion of the limb. But it was found impossible to straighten the leg after division of the tendons, owing to the tension of the remaining soft structures in the popliteal region. This condition is generally found to exist in children who have long suffered from such a degree of flexion at the knee that the head of the tibia is removed from direct pressure upon the extremity of the femur for a long period. It has been attributed to an overgrowth of the femur owing to the removal of the pressure of the tibia. It is much more rational, however, to explain the tension of the tissues of the ham in these cases by the long-continued contraction which has existed. It is certain that, by the most accurate measurement made in this case, no difference in the length of the femurs could be detected.

Failing in this effort, a consultation was held with Dr. James R. Wood as to the propriety of either excision of the knee-joint or amputation. By excision it was proposed to anchylose the knee, and thus give the boy a firm, straight leg on which he could support his weight, though, owing to the general atrophy of the muscles, the limb would have many of the characteristics of an artificial leg. Dr. Wood not only favored amputation, but em-

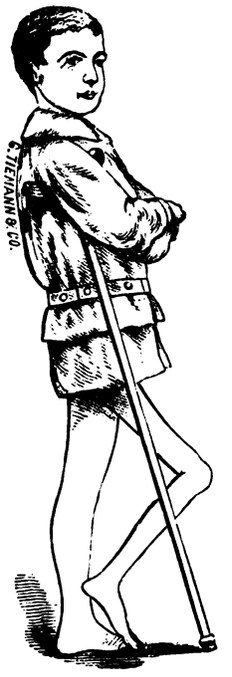

FIG. 1.

FIG. 2.

phatically disapproved of excision. He regarded the latter operation as full of danger when performed on a healthy joint, having at that time little faith in antiseptic methods.

After a few weeks' delay I decided to excise the joint, and all the usual antiseptic precautions of that period were taken. The small room in which the operation was performed was filled with the vapor of a solution of carbolic acid by a powerful atomizer.

The joint was opened by dividing the patella. The joint-surfaces were perfectly healthy, and it was determined to remove from the extremity of the femur alone a sufficient extent to enable the limb to be straightened. Four thin sections were made before the tibia could be brought into proper position. In making these sections my purpose was to remove as little of the extremity of the femur as possible, in order that its future growth might not be affected. For the same reason the tibia was left entirely undisturbed, the cartilages and synovial membrane being left intact. It was believed that, though bony union might not occur, a firm fibrous anchylosis would follow.

Two wire sutures were inserted to maintain the apposition of the femur and tibia; the two halves of the patella fell readily together, but were held in place with one suture. The wound healed without suppuration, and the patient was again moving about on crutches at the end of four weeks. There was at that time considerable movement at the knee. In eight weeks he began to bear some weight on the limb, and the consolidation was much more firm, but not complete. At the end of twelve weeks he was walking without a crutch or cane, but with some imperfection of gait, owing to the anchylosis, which was not

yet so perfect but that some motion, though very slight, could be obtained. In four months the union, though fibrous, was so firm that motion could not be detected (Fig. 2).

He had now acquired an elasticity in his movements which so concealed the imperfection of the leg due to stiffening of the knee, that it was difficult to detect his infirmity.

About this time I again called Dr. Wood's attention to him as a boy who had an affection of one leg which impaired his gait, and asked his advice as to the proper procedure to remedy the defect. He did not recognize the lad as the patient whom he had formerly seen, and after directing him first to walk and then to run, declared that he saw nothing wrong in his movements.

I have now operated in a number of cases, and always with results similar to those already detailed. The cases selected are those in which the atrophied limb is only slightly shorter than the well limb. Although the anchylosis has been firm when only bone has been excised, yet the union has been very slow. In three cases I have excised only the femur, but in the others I excised both bones. The latter united more promptly, though there was more shortening.

MEDICAL CASES IN THE COURTS.

By HENRY A. RILEY, Esq.,

NEW YORK.

Dr. Isaac Lewis Peet recently furnished to the *Columbia Law Times* an article on "The Legal Relations of Deaf-Mutes to the Hearing Community," and cites a case in New Mexico, occurring in 1883, where three white men were tried and convicted of the murder of three Chinamen. The only testimony connecting the defendants with the deed was that of a deaf-mute between eight and nine years of age. He had never been to school, but had learned to communicate with his mother by signs. According to the mother's testimony, on the same evening that the killing took place, the child came into the bar-room of the public house kept by his parents, in a state of great excitement. He drew his finger across his throat, took a stick and pounded with it, and raised it as if in the act of shooting, and went through the motion of falling. The mother appealed to a soldier who happened to be present, and asked him what the child meant. The soldier, thinking he referred to a difficulty which had lately occurred between two soldiers at the fort in the vicinity, pointed to himself, but the little boy pushed him aside, and pointed to Duran, one of the defendants, and putting his hand to the back of his head, represented the braiding of three queues.

The next morning the deed was discovered, and the third day the boy was placed on a horse to lead a party of investigators. Keeping considerably in advance, he struck the trail of the horses which the murderers had ridden, and followed it on a circuitous and out-of the-way route, off from any road, to the very house where the Chinamen had been killed, and by signs and actions expressed astonishment at not finding the bodies. He again went through the motions of killing the three queue-wearers, and described the murderers by drawing his finger around his throat, by twisting his nose, and by dotting his face with his fingers. Of the defendants in court one had a clearly defined mark around his throat, another had a broken-down nose, and the other was decidedly pock-marked. Before the court he drew a plan of the house and grounds, and objects in the immediate vicinity, the roads to and from the place, and its location to Fort Bayard. On this plot he also marked out the position of each of the defendants while in the act of killing the Chinamen, and also his own position holding the horses. The way in which he happened to be an eye-witness, and indeed the only eye-witness of the deed, was that he was a great pet with the frequenters of his parents' tavern, and among others of the lawless men who were identified by him. He was accustomed to ride with them on their expeditions, and was greatly amused and interested by their ordinary exploits. But accompanying them on this occasion, his innocent soul revolted in horror at the cruel deed which they had not hesitated to let him see, because they were certain that no accusation could be made against them by a dumb witness.

The child's testimony was admitted by the trial judge, who said: "This little boy has no education, yet I am inclined to believe that, notwithstanding the fact that the mother is unable to communicate to him any questions to test his knowledge of an accountability to a Supreme Being, yet, as a psychological fact growing out of his mental condition, he would be incapable of communicating any events except such as he had seen. He would be incapable of manufacturing or inventing a falsehood as to the material facts, because he could have no idea of the facts unless he had seen them. In my opinion this would be a better test of the truth, or at least as good a test of the truth, as would be the belief of a man of mature age and clear understanding in his accountability to the Supreme Being."

The boy's testimony was therefore accepted, but on appeal this decision was reversed, and the court said: "A deaf and dumb child who has never been educated in an institute for deaf-mutes, who cannot be made to understand anything of the nature of an oath, and who can do nothing more than give an account of what he saw, without affording any means of examination or cross-examination, is not a competent witness, especially in a capital case."

This reasoning is far from satisfactory, and although the occasion was a strange one, and the testimony of a very novel character, yet some ground should have been found or made for letting it in. As one of the dissenting judges said: "The books nowhere furnish a precedent like this. If the law of evidence in no way opens the door for testimony of this kind, then all I have to say is that the law in this respect is certainly at fault, and the sooner it is changed, either by judicial precedent or by legislation, the better."

Texas has not been generally regarded as the fountain-head of legal wisdom, and not long since the Supreme Court of the State attempted to reverse the ruling of the United States Supreme Court; but this gallant effort of a lost cause went down in the last ditch, and the learned judges of the Washington court were left possessors of the field. It must not be supposed, however, that the Texas judges always proclaim bad law, and they certainly have some humorous cases on their calendar. In a recent case in that State of magnificent distances, suit was brought for damages, because a person had been unnecessarily obliged to ride some two hundred miles on a buck-board. The action was against the Western Union Telegraph Company, for not delivering a message in which the sender asked his father to meet him with a carriage at a town called Pena. On his arrival at this place no father or carriage appeared, and the traveller was obliged to travel a long and circuitous route to reach his home at Edinburgh.

On the way he had time for reflection and thought, and he became more and more convinced that his father must be dead, or he would have sent a carriage. This idea so affected his health and produced so much mental anguish that, when he arrived home and found that the telegram had never been delivered, he determined that the Western Union Telegraph Company should pay him a round sum as a balm to his wounded feelings.

The court did not, however, take this view of the matter, and refused to balance lacerated feelings by cold cash. In refusing the plaintiff's demand, it took occasion to say: "Had it been a fact that no other conveyance could be procured from Pena to Edinburgh except such as those upon which plaintiff took passage, it could not have been anticipated that in the usual course of such a journey

plaintiff's posterior could become bruised or lacerated to such an extent as to cause physical pain. . . . In this case it seems that the plaintiff's mental anguish was not the result of any real or adequate cause. It does not appear that the father was dead, or in such a condition as demanded the personal presence or attention of his son. On the contrary, the sorrows of the plaintiff were imaginary, and were caused by the failure on the part of the father to send the carriage to Pena, which the affectionate son attributed to the fact that the father was dead or too dangerously ill to attend to ordinary business, when, in truth, the failure was due solely to the fact that no request to send forward the carriage had been received.

"The deduction of the son was not logical, or, at all events, the occurrence might have been well accounted for on other hypotheses than the disability of the father. If grief or sorrow, produced by things unreal, mere figments of the brain, are held to give a cause of action for a breach of contract or a tort, an individual of a sombre, gloomy imagination would be entitled to large damages on account of mental suffering, while others of a buoyant fancy, for the same breach of duty, would not be entitled to anything; and damages, instead of being measured by the rules of law applied to the rule of facts, would largely depend upon the fertility of the imagination of the suitor." The court, therefore, in an unfeeling way, declined to aid the plaintiff in the attempt to wring unwilling cash from the treasury of the Western Union Telegraph Company.

In another case in the same court the same telegraph company was also defendant in a suit to recover damages for wounded feelings. In this case a husband sent for a physician by telegram, asking him to attend his wife in her confinement. The messenger went twice to the office of the physician to deliver the message, but not finding him, made no further effort to secure his services. In the meantime the plaintiff's wife gave birth to a still-born child. In a suit to recover damages, the mental suffering of the plaintiff was alleged as a ground for recovering a verdict; but in this case, as in the former, the court held that such harm was too indefinite and remote. It said: "We do not think the death of the child before birth, and the grief or sorrow occasioned thereby, can be an element of damages in this character of suit. If it is made to appear from the testimony that Mrs. C—— suffered more physical pain, mental anxiety, and alarm on account of her own condition than she would have done if Dr. Keating had been in attendance upon her, and the failure to secure his services is shown to be due to the want of proper care on the part of defendant's servants, whose duty it was to deliver the message, a fair and reasonable compensation should be allowed for such increased pain and mental suffering; but the death of the child, the bereavement of the parents, and their grief for its loss, cannot be considered as an element of damages. Such damages are too remote."

The right to recover for medical services, to be rendered in the future, is an important one, where a person, and particularly a minor, is injured through the carelessness of other persons. This question came up in the case of a child who was injured by a street-car belonging to the Brooklyn City Railroad Company. The action was brought by the parent for loss of service, resulting from the accident to the child, and the court submitted to the jury the claim also for future medical services, and a verdict was rendered including this. The only ground of action conceded by the law in an action by the parent is the loss of service suffered by him in consequence of the disability of the child; pain and mental suffering are not strictly grounds upon which the parent can recover, though in actual fact juries generally are swayed by such considerations. An action by the child himself would properly bring up such elements of damage.

In the case just cited of the Brooklyn City Railroad, the child had in fact brought suit and recovered, and now the parent sues again for loss of personal service and the probable cost of future medical services. As the trial judge allowed the last element to be considered, the case was reversed by the Court of Appeals. The ground of the decision is thus stated: "If recoverable by the parent, it must be on the ground of the obligation to maintain the child. But not only may the parent die or the child die, thereby rendering the surgical expenses unnecessary, but the parent may become wholly unable to pay for the services required, or the child may be treated in a hospital or at public expense, as was the fact in this instance, when the child's leg was amputated."

When Mrs. D—— was convicted in this State, about two years ago, there was a great deal of undeserved sympathy expressed for her, and a strenuous but unsuccessful endeavor was made to secure a commutation of the sentence.

There is now the same effort being made in Philadelphia to secure a commutation of the death sentence for another female poisoner. The woman was convicted of murdering her daughter, aged nine years, and her husband and an infant son had been put out of the way previously. All of these hideous crimes were committed for the sake of the insurance on their lives, amounting only to a few hundred dollars. The petition which has been presented to the Pennsylvania Board of Pardons, says that "the imposition of the death penalty upon a woman is abhorrent and repulsive to humanity, and particularly shocking to the women of Philadelphia."

It is hardly desirable for this effort to succeed, it would very likely be mistaken mercy. A woman who will murder a husband and two children merely to obtain a few hundred dollars of insurance, has too much of the fiend in her disposition ever to be a safe member of society.

If it were not a sad fact that few criminals serve out a life sentence, but secure a pardon after a few years of imprisonment, there would be less opposition to the present petition. There is, however, little certainty, if the effort succeeds, that Mrs. W—— will serve out a life-sentence. After a few years, when the public have forgotten the enormity of her crimes, she will quite possibly come out to repeat, it may be, the same diabolical deeds.

The condition of the insane is always a matter of interest, and generally also of commiseration, for the accommodations provided are rarely suitable for the requirements either of acute or chronic cases. The asylums of New York State are no exception to the unfortunate rule that the inmates do not receive the treatment necessary for their restoration to health and sanity. The State Board of Charities has recently made a very elaborate report of the condition of the asylums, and particularly of those in counties which endeavor to take care of their own insane. In these counties economy is sought rather than the best care, which is necessarily expensive. The result has been that the patients generally fail to secure the benefits they expect. The remedy which the State Board of Charities proposes, is to require the counties to send their insane to the State institutions, and then to make the cost of the care a charge upon the State rather than require the counties to foot the bill. A bill has been introduced in the New York Legislature carrying out these views, but it has not yet received favorable action. It is not anticipated that the counties will object seriously to the burden which they have already borne being assumed by the State. The importance of the matter will be at once seen when it becomes known that on October 1, 1887, there were in the County and State asylums combined 14,062 insane persons.

Acute Yellow Atrophy of the Liver and Phosphorus Poisoning.—Dr. Poore believes that all cases of acute yellow atrophy of the liver are due to phosphorus poisoning. Since the recognition of the marked changes occurring in the liver from taking phosphorus in overdoses, the cases of so-called acute yellow atrophy reported have been very few. If there is a true idiopathic acute yellow atrophy, it is clinically indistinguishable from phosphorus poisoning.—*The Lancet.*

SOME DEFENSIVE REMARKS ON THE CLIMATE OF MINNESOTA.

By T. J. HUTTON, M.D.,

FERGUS FALLS, MINN.

EMERSON says, "There is a crack in everything that God has made." If we must criticise, it were better to use the language of a pious departed prelate, "It did not please God to make this world perfect."

Of the great physical agents which most powerfully influence the human race—climate, food, soil, and the general aspect of nature—climate ranks first in importance; and in this matter of climate alone—not to speak of food—how much acute and chronic grumbling there is on all sides, and in every land! Climatically considered, how few real Happy Valleys, or Felicitous Hill-sides there are! As a matter of fact, how few large classes of men are climatically contented. Herein the old woman's adage is true, "If it isn't one thing it's another." True, the Bermuda negro and the New Zealander *seem* happy in their sun and surf—if, indeed, these beings can be termed men. But in reality even these are not all happy. I have seen the Bermuda negro, on his "native heath," lathered in surf and saturated with "soda-water," gasp for breath on a hot summer day like a canine exhausted in the chase.

Throughout our country everybody claims to know all about the climate of Minnesota, but in reality very few—even of its own residents—are posted on its characteristics. My remarks on this subject, based upon ten years' residence and practice here, will be brief and practical—defensive, not panegyric—but, above all things, strictly truthful.

The climate of Minnesota is practical rather than ideal; severe but chaste; harsh but exceedingly healthful. Its distinctive qualities are due to its atmosphere, which is cold, dry, and pure; and its atmospheric peculiarities are due to geographical position, being at the centre of the continent, far from oceanic influences, and at the top of the continent, where its head-waters divide, and where, during most of the year, Sol's rays come slowly, feebly, and askant. Our winters are long, cold, and, toward the end, a trifle tedious, but the compensatory element is that they are pretty uniformly cold from beginning to end: one may know at the approach of winter what kind of weather is ahead; no rain, fog, mist, or drizzle; no rapid and low falls of the glass, causing slush and slough to appear; and—with proper food and clothing—these same cold winters are exceedingly healthful. The sensations experienced in this coldest air are friskiness, muscularity, and clear-headedness. As to the sensation of cold, or degree of suffering from cold, one hundred truthful observers will confirm this statement, viz.: five minutes' exposure to the March east wind in New York or Philadelphia will cause much greater suffering than thirty minutes' exposure here at our very lowest temperature. This difference is due to our air being dry. But we have a greater number of cold days—our winters are longer; briefly stated, this is the great, if not the only, objection to our climate.

The chief beauty of the Minnesota winter is that there is bright sunshine throughout, cloudy days being very few indeed. On the coldest days (there are three or four days of −40° F. temperature each winter) the sun shines with dazzling brilliancy. At such times the stranger within our gates, judging of the weather through the window, would think it a shame that the children were not out-doors playing marbles or jumping rope. The summers are short and bring some very hot days, but, the air being dry and the nights cool, there is perfect refreshment in sound sleep—a blessing not had in hot, muggy climates. Vigor being restored each night by sound sleep there is less discomfort by day, and the so-called summer disorders are very rare indeed. There is no regular spring season. Autumn is more pronounced. June and October are the pet months of the year. In June the foliage is fresh and dense, and then the tints of earth, sky, and water are the richest imaginable.

The climate of Dakota and Eastern Montana is similar to ours, and where good water abounds there is remarkable healthfulness. In proof of this, Valley City, a pretty county-seat in Dakota, itself containing a population of some two thousand souls, contains only one physician. Glendive, a pretty county-seat in Montana, containing a population of about one thousand—not to speak of the county at large—supports but one physician.

Dakota being more level and more treeless than Minnesota, old Æolus occasionally loses his grip on the winter winds. Then comes that famous phenomenon, "the Dakota blizzard;" and he who has breasted that gale may well be excused for quoting:

> "Go feel what I have felt,"

or comparing notes with that tourist who asks—

> "Can I forget that night in June
> Upon the Danube River?"

Let me relate a personal experience, which may convey a faint idea of this truly grand elemental behemoth. It is midnight in January. We are twelve miles (south) from home; rolling prairie intervenes. Our patient is at ease, we must start for home; for, like Byron's sailor,

> "Tho' the trembling mast quiver like a reed,
> Yet must I on."

It is cold, say −40° F. The still small voice of the blizzard is suggested by an ominous breeziness and a light snow, flying at right angles, some sixty miles per hour, like the

> "Swallow, swallow, flying south."

Soon the breeze stiffens and the snow thickens. I can no longer see my horses. Good God! I am all alone in a genuine Dakota blizzard, and ten miles yet to drive. And now, on full realization of the grandeur and the danger of the thing which encircles me, the mind assumes a peculiar state, like, in a general way, that of those who face death; only that this grand executioner robs death of its foul terrors, and gives it—I had almost said—a charm.

I am warmly clad in fur, so that I suffer nothing from the cold except my face, which is partly exposed, and which is duly searched by this due-north drive. In such air and at such pressure oxidation or tissue-metabolism is perfect, and this doubtless contributes to the mental elevation which, now as always, I have experienced in the blizzard. Indeed, the mental state is moral, sublime, or prophetic. It is not "Behold I show you a mystery," but "all mystery is about to be solved to you." It is the burning bush; it is Pisgah's height; it is transfiguration; it is the enchanted land of the "Arabian Nights;" it is Boreas and Thor come to take us to the heavenly mansions of Valhalla.

Real fear, sadness, or depression, there is none, for in this perfect oxidation mal-spirits are absent. The mind is incapable of depressing emotions, it is rather in a state of gentle elation, as in the martyrs who sang on the scaffold. It is no Tam o' Shanter affair; it is earnest, serious—yet a sort of mild Quaker joy. The law of chances or probabilities are against our ever reaching home; yet, thanks to our good steeds, after three or four hours of arduous toil (for them) we arrive there, and are soon at rest in the kind arms of Morpheus.

The real blizzard, whose spent fragments reach our northwest horizon, is, however, of rare occurrence, and is not an unmitigated evil. It constitutes a great Sabbath-day of nature's own making, a subject for talk, an epoch for reckoning, and a phenomenon of lively interest generally to the great majority of the population. As for the dozen or so of wayfarers who succumb to it in a decade they do not make a drop in the bucket to those whom falling brick-bats, street-car wheels, and other destructive agencies mutilate or destroy hourly in our cities, great and small.

Years ago I was called to resuscitate, if possible, a victim of whiskey and a blizzard. It was the first case of "frozen to death" that I had ever seen. Although the body was ice-cold, and stiff as a board, the eyes were

wide open and so preternaturally bright that for almost an hour, doubting it myself, I did not dare to tell his friends that he was dead; but rather felt to address him as a living being:

"If thou hast any sound, or use of voice, speak to me!"

This cold, dry, pure air possesses highly oxidizing, stimulating, and aseptic properties. Its low temperature, as well as its full supply of ozone, makes it aseptic; hence opposed to fermentative and microbic disorders. Its tonic and stimulating properties invigorate all the cellular elements, organs, and functions; hence it renders the causes of many diseases inoperative, and by the special tonus imparted disease of all classes is more readily resisted. By perfect oxidation self-waste is consumed; hence there is here but a minimum of the languor, ennui, and malaise which attend mal-oxidation and which constitute the modern evil spirits of humanity the world over.

This climate is too harsh for the nervous, the refined, the aged, and the feeble beyond power of rude reaction. It will not produce eminent poets or centenarians, neither will it generate dudes, dreamers, fools, or hypochondriacs. Rugged physique, rugged vitality, and a keen, rugged mind are the products of such a climate. The typical Minnesotian is a vigorous animal and a rustler. He has a mission to perform. He cannot sit still on a fence or dangle his limbs from a store-box. He cannot be idle. The restless genius of his "native air" says in tones of silent thunder, which must be obeyed, to everyone of him, "John, go and do something," and he does it. Even if he wish to, he cannot be a sluggard. He has his choice to hustle or to migrate. His air compels thought, consciousness, action. He may not live as long in his dry, highly ozonized air as in one moister and milder; but here he enjoys a keener and more cheerful sense of being, and does not run the gamut of the host of ailments which in moister and milder climates slay by the wayside.

There are fewer objections to be made to this than to most climates. Due to better body-tonus and asepsis—both the product of our air—there are fewer diseases here; these prevail less than elsewhere, and are attended by a lower mortality. The rarity of some of the commoner ailments which decimate mankind in milder and moister climates is simply marvellous; and I believe that the people of this State pay less money for drug-bills and doctor-bills per thousand population than any other State in the Union.

Dry nasal catarrh and diphtheria are the only prevailing diseases. The former is the fault of the climate, but it is so slight that it rarely calls for medical aid. The latter occurs in rural log-houses chiefly, and is due to neglect of ventilation. The fungus which generates this malady could find no better field of activity than in the dark, muggy air of these air-tight log-houses. But this is not the fault of the climate.

A few illustrations are now in order as to our healthfulness, based on the rarity of what are everywhere denominated "common disorders." Dyspepsia is not a disease of this climate; the Minnesota appetite is proverbial. Due to the special body-tone which I have repeatedly mentioned, obstructive disorders and those resulting from flabby and relaxed conditions of body scarcely occur here. Biliousness, bilious fevers, agues, do not belong here. Passive congestions, dropsies, diarrhœas, hemorrhages are very rare indeed. I have not written three prescriptions per summer for diarrhœa in the past ten years. Inflammations are also exceedingly infrequent.

I have treated but three cases of pleurisy in the past ten years. About a dozen cases of pneumonia have been seen in this time, the majority being alcoholics, and no case in the remainder attended with fatal results. Some six cases of acute bronchitis were seen, none capillary, and none fatal. Brain fever is said to result from low temperature, but I have never treated a case here in winter. Neuralgia and true rheumatism are also exceedingly rare. Many disorders are erroneously called rheumatism by the vulgar. I have not seen more than half a dozen or a dozen cases of acute rheumatism during my residence here; and, excepting a few cases of sciatica, I do not recall having treated any cases of neuralgia—so purifying to the blood is our air, and so soothing to the nerves, cold though it may be.

It appears to me that this climate is also a great ameliorator, if not curer, of cachexia, dyscrasia, and constitutional taints generally. There is here but a most meagre showing of scrofulous manifestations, and these are speedily amenable to treatment. Syphilis seems to die out in old and young. Cancer is not often encountered. I have seen here no phthisis originate in children, although the conditions of food, clothing, heat, and hygiene in general are not always the best. Occurring in adults, if not markedly hereditary, it responds well to appropriate treatment in the initial stage. Even when markedly hereditary, I have known this climate alone work many thorough cures. Four cases of this class come to mind as I write—two bankers, a lumberman, and a Catholic priest, who had all come from the East.

Let me observe here, parenthetically, that climatic benefits are far from being fully utilized. A few of the wealthier classes only avail themselves of climatic therapy; rarely is climatic prophylaxis resorted to; and still more rarely are homes selected in early life on purely climatic grounds. Yet if some climates are healthier than others—a proposition which admits of no dispute—such selection would find its basis in the soundest philosophy.

In conclusion, every climate has its distinctive drawbacks; no climate is perfect. I myself have grumbled in print over the transient asperities of our winter; but a liking for it continues to grow in me stronger and stronger every year. My objections then were based on long midnight midwinter drives of from twenty to fifty miles. These would be almost intolerable in any winter climate. The advent of railroads has done away with all such Herculean services. If men were governed either by pure instinct, which does not err, or by perfect reason, which is not yet attained, it would be difficult, if not impossible, to find a climate that, taken all in all, has fewer objectionable features than this. As it is, we do not know what is best for us; we whine like babes for things injurious, and at all times err and blunder. But, to quote Emerson again: "Here we are, that is a great fact; and if we tarry a little we may come to learn that here is best."

Treatment of Chronic Diarrhœa.—Dr. Debove claims great success in the treatment of chronic diarrhœa, especially of the tuberculous form, by silicate of magnesium. This remedy he administers in doses of half an ounce to an ounce and a half a day, suspended in a quart of milk. As a result the diarrhœa disappears. The silicate of magnesium is known under the name of *talc* or *steatite*; it is insoluble, inert, and has not heretofore been supposed to have any medicinal properties whatever. According to Debove, it promotes the healing of intestinal ulcerations, but seems only to be efficacious by its presence in large quantities. Debove says it is readily and rapidly eliminated from the intestines.—*The Boston Medical and Surgical Journal.*

Spontaneous Fracture in a Sarcomatous Tibia Followed by Bony Union.—In this case, which came under the observation of Dr. Valat, of Paris (*The Annals of Surgery*), the sarcoma appears to have been a slowly growing one of central origin. The first fracture occurred some months before any tumor was noticed. The patient got about with crutches until a year later when a second fracture occurred. This slow evolution raised the suspicion of hydatid disease, but an exploratory puncture set the question at rest. After death it was found that both fractures had united by good osseous union, a very rare occurrence in the case of sarcomata of bone, and one which tends to prove that the usual failure to unite simply depends on the rapid progress of the tumor.

ATONY OF THE RECTAL POUCH, AND ALSO OF THE ANAL SPHINCTERS: ITS ETIOLOGY, PATHOLOGY, DIAGNOSIS, AND TREATMENT.

By WILLIAM BODENHAMER, A.M., M.D.,

NEW YORK.

Atony of the rectum, as its name implies (atonia, ἀτονία, from ἀ, privative, and τόνος, tone), consists essentially of the loss, to a greater or less degree, of the tone or contractile power of the muscular coat of the organ. It is not a true paralysis, such as occurs in paraplegia, but merely a local impairment of muscular contractility.

Comparatively few authors have written upon the subject of this affection, although it is of much more frequent occurrence than is generally believed; and most all those who have noticed it, denominate it either *constipation, distention, dilatation,* or *relaxation,* of the rectum. But these terms are employed in a loose and unscientific manner, and this simple circumstance shows that the subject has not been well studied; indeed, these terms are entirely too vague and too indefinite to denote the true nature of the malady, they merely indicate the cause or the effect, but not the affection itself, consequently they are misleading.

With regard to the term *constipation,* it is derived from the compound Latin word, *constipo,* formed from *con,* together, and *stipo,* to cram, or to fill up close. The corresponding term *obstipato,* by which a form of costiveness is frequently described by Latin authors, is from *ob* and *stipo,* to obstruct, hinder, or stop up. The true import of the word *constipation* would therefore appear to be a mere collection or impaction of excremental matters in some part of the intestinal canal, the residuum of the various processes concerned in alimentation. It is obvious therefore, that constipation cannot be considered a disease, being, as it were, a mere collection of impacted fecal matter; yet it is nevertheless, the cause of many diseases, and is also often the sequel or result of disease.

The accumulation and impaction of the fæces in the pouch of the rectum is most always the result of the habitual neglect to attend strictly to the calls of nature in regularly emptying the organ; consequently the collected and impacted fecal mass, by its presence, mechanical pressure, and abnormal distention of the parietes of the rectum, causes the affection in question; and it may be observed, too, that in such cases, the protracted presence of the indurated fecal matter obtunds the organic sensibility of the organ, so that it requires something more than the accumulation itself to stimulate it to the expulsive effort. It may, indeed, be also remarked here, that while the impaction of fecal matter is the immediate cause of the atony, in such cases, the want of attention to the demands of nature in regularly evacuating the rectum is the remote cause. This defect of muscular power in the rectum, the result of prolonged distention of its walls, is similar to that familiar condition which takes place in the bladder when the calls to empty it are postponed too long; in this case the organ will not respond when the effort is made to relieve it, so that catheterism must be resorted to should simpler means fail.

The rectal impaction of fecal matter may, on the contrary, however, be the sequel or effect, instead of the cause of atony, as when some other cause has previously produced it. In such a case the accumulation is permitted to take place, because the rectum is powerless to completely expel it. As for example, atony, or the loss of rectal power, is frequently caused by the long continued pressure of the head of the child upon the inferior portion of the rectum, during a difficult and protracted labor. The writer has seen a number of such cases, and they are quite familiar to gynecologists, and are sometimes difficult, if not impossible, to entirely relieve; he has observed some such cases who for months or years after the accident, had not the power to expel indurated fæces without a resort to artificial measures. It is also well known that atony of the rectum is sometimes produced by the pressure upon the organ of ovarian tumors, uterine fibroids, uterine displacements, and the gravid uterus.

In certain conditions of the stomach and bowels, there is often an excessive quantity of gas generated, which accumulates in the colon and rectum, and which of itself, independent of fecal impaction, causes constant distention of these organs, and thereby produces atony of the same. Indeed, the writer must not omit mentioning here that the abuse, or the too frequent use of effervescing or gaseous products, as some mineral waters, or other waters charged with gas, etc., are also fraught with mischief, by the gas producing constant undue distention of the walls of the intestinal canal, more especially in the colon and rectum, into which it so readily passes, and in which it is more or less detained, and thus induces the disease in question.

Now, as to the terms *distention, dilatation,* or *relaxation,* it is evident that each one, like *constipation,* can only be properly used to designate the cause or the effect, as may be, instead of the atony itself. As an evidence of the improper use of the term *constipation* to designate atony of the rectal pouch, will at once appear by the manner in which it was used by the distinguished M. Brétonneau, of Tours, France, who, a number of years ago, met with many cases in which he found "great dilatation and torpor of the rectal pouch, forming as it were, a greatly enlarged place for the lodgement of fecal matter, which sometimes accumulated in it to such an extent as failed to be expelled." This plainly described atony of the pouch of the rectum he called *rectal constipation,* and astonished his contemporaries by the recommendation of powerful tonic and astringent injections, remedies such as are usually employed in diarrhœa, etc., instead of the active purgatives generally used to cure constipation. But viewing the disease as atony, and not constipation so called, the tonic and astringent injections of M. Brétonneau were both highly proper and rational, as will be shown. Constipation, as it is called, has generally been attributed to torpor of the liver, and the most active concentrated cathartic remedies in the form of pills, etc., were employed to arouse the indolent organ; whereas, on the contrary, in the affection under consideration, the torpor is in the rectum itself, and can be relieved by much milder, safer, and more certain means.

The writer thus far has been explicit upon several points, perhaps to prolixity, but he found great discrepancy in the descriptions and statements of various authors regarding this affection.

The loss of tonicity, or defective muscular power in the rectum, especially in its pouch, rendering it incapable of properly expelling its contents, is of much more frequent occurrence than is generally believed, and is doubtless often overlooked and diagnosticated as constipation of the bowels, and treated as such by the use of various purgative remedies. It is an affection which is attended by much distress, inconvenience, and trouble, and is liable, unless relieved, to result in serious injury, not only to the rectum itself, but also to those organs in its immediate vicinity. Indeed, whether the atony is due originally to the distention of the rectum by impacted fecal matter, or from some other cause, it cannot continue long without also seriously affecting the peristaltic movement of the organ.

Some of the causes and symptoms.—To enter fully into the causes, symptoms, rectal reflexes, and consequences of this affection, would far exceed the limits and objects of this article. A few observations, however, upon the most common causes and sequelæ of atony of the rectum, in addition to those already given, will be considered.

The most common remote cause of atony of the rectum is, perhaps, the habitual disregard of the calls of nature to relieve the organ, as previously remarked. It is demonstrated by the anatomy and physiology of the

rectum and anus, that nature has designedly made provision for the accumulation as well as the retardation of the fecal matter in the rectum, by furnishing this organ with a pouch or ampulla, and its extremity with a muscular mechanism, in subjection to the will, for the purpose of opening and closing it. This controlling and restraining power, when properly and duly exercised, is highly essential to our comfort and convenience; but when it is abused, in order to postpone or to set aside the admonitions of nature, so as to retain the excremental matter beyond the period when nature calls for its expulsion, serious consequences, sooner or later, will inevitably ensue.

It may also be proper here to remark, that not an unfrequent cause of atony of the rectum is that some persons, especially females, are in the constant habit of daily using warm or hot water injections into the rectum for the purpose of evacuating this sometimes torpid organ; but, by continuing this pernicious practice, the rectum is soon deprived of all the normal power of evacuation by its own efforts. It must be obvious to all experienced practitioners that the continued employment of either warm or hot water enemata, for the purpose of daily relieving the bowels, is injurious; for while it is true that by their first impulse they induce the peristaltic action, their reaction is always followed by the muscular fibres being left more or less softened, relaxed, distended, and deprived of their contractile power. These objections do not apply to cold water injections at the ordinary temperature; therefore, if such persons are compelled to use enemata in these instances, they should employ cold water, instead of warm or hot water, by which they would more easily attain the end they have in view and avoid the inconvenience of diminishing, more and more every day, the contractile force of the muscular fibres of the rectum, and thereby increasing the degree of their tonicity; for it is an established fact that the reaction of the cold water leaves the muscular fibres of the rectum more vigorous, more natural, and more effectually disposed to peristaltic action; whereas the reaction of either warm or hot water leaves the muscular fibres of the organ relaxed and enervated, consequently neither warm nor hot water injections should ever be used in atony of the rectum, as their tendency would be to induce the disease instead of curing it. But the abuse, or the too continued use of large cold water injections may also produce atony, as they, by their large quantity or bulk, unduly dilate the walls of the rectum and thus impair the power of its muscular coat.

Symptoms.—Some of the most prominent symptoms of atony of the rectum may be summed up as follows: There is generally experienced, in confirmed cases, a sensation of fulness or weight in the rectum, and a frequent desire to stool; but an evacuation, even when effected, does not altogether appease the desire, but leaves an uneasy feeling, as if some fecal matter still remained, with not sufficient power to expel it; defecation is sometimes attended with tenesmus and forcing pains, and a discharge of mucus streaked with blood, or a discharge of fluid fæces, which may have passed by a fecal bolus, lodged in the rectal pouch, and which may lead to an erroneous diagnosis of diarrhœa. In some of these cases the pouch of the rectum becomes dilated to an almost incredible extent, and filled with fecal matter, so that this distended viscus will sometimes be found to occupy a large space of the pelvis; while at the same time the organ makes but little or no effort to dislodge the accumulated mass; if the finger or the bougie be now introduced per rectum, it will readily encounter the rectal bolus, and at once determine the nature of the case. The bladder, urethra, and the other contiguous organs, often participate in the irritation produced. In men the prostate gland and neck of the bladder become affected, and in women uterine irritation and frequent micturition are the results. In such cases, whenever the rectum is completely evacuated, there is often experienced a distressed feeling of weakness in the loins, and sinking, with a want of the usual muscular tension, until the organ again becomes moderately replenished. On a specular examination of the empty rectal pouch, in the worst cases, it will be found abnormally enlarged, and presenting a smooth membranous bag, from which it would be difficult to expel indurated fecal matter, by the natural efforts. In some instances, however, the pouch will be found to be partially filled with enlarged folds of loose mucous membrane, which, when making defecating efforts, sometimes pass down into the fossa, between the internal and external sphincters of the anus, blocking up the narrow canal, and impeding the evacuation of the fæces, and also, to some extent, forming an impediment to the introduction of instruments and enemata. This morbid condition of the mucous lining is doubtless the result of a neglected state of the bowels. Indeed, this affection, if neglected or mismanaged, not only may give rise to internal prolapsus recti, but also to an intussusception of the superior and undilated portion of the rectum, into the dilated pouch, the inferior portion, and it may also give rise to a painful state of the anal sphincters.

Atony of the rectum and colon is most commonly met with in delicate females of a lax muscular fibre, and in those whose sedentary occupations lead to a neglect of the necessary measures to insure regularity of the functions of the organ. It is also frequently met with in delicate children.

Treatment of atony of the rectal pouch.—In the treatment of defective muscular power of the pouch of the rectum, it is of importance not only to be able to recognize the true nature of the malady, but above all to know also the most rational and effectual measures for its relief. The first consideration in the treatment of this affection is to enjoin a strict observance of regular habits, regarding a daily evacuation of the rectum, and this desirable object in mild cases may be aided and often attained by simple means, such as the injection of from half to one pint of cold water into the rectum, at the regular time of going to stool every day. This constitutes a most valuable remedy in atony of the rectum; cold, being tonic, stimulant, and astringent, acts somewhat similarly to nux vomica, by exciting the sensibility and contractility of the organ, but should be discontinued as soon as the object of its use has been attained.

In the more obstinate cases, however, the chief remedies should be nux vomica alone, or in combination with some other suitable ingredients, together with the employment of rectal injections, composed of powerful astringent and tonic substances, with the intention of producing contraction, corrugation, and condensation of the weak and relaxed muscular fibres of the rectal pouch, by which they become shorter, stronger, and firmer, and thus aid in diminishing the morbidly enlarged pouch to its normal dimensions and tone.

The exhibition of proper aperients, as adjuvants, are indicated in some of these cases, and cannot be dispensed with, especially when atony of the colon exists with that of the rectum. But drastic purgatives should not be used, for they, as a general rule, do more harm than good in such cases. The smallest dose of an aperient should be given, so as to gently rouse the normal peristaltic action, and only to continue its use until a habit of daily evacuation is induced. The object is, by no means, to excite watery stools, but to induce, as much as possible, an imitation of the normal action of the bowels. Indeed, the best and only method to keep a regular action of the bowels, after the habit has been re-established, is to compel them, if possible, to perform their own legitimate work, by withholding aperients, as well as all the other artificial means generally used for this purpose. With regard to the ingredients composing the astringent and tonic injections to be used in the treatment of atony of the rectum, such substances abound, and may be varied indefinitely by the practitioner. These injections should not exceed in measure more than five or six ounces, and should not

be administered until the rectum has been previously emptied of its fecal contents by a proper enema or an aperient. The astringent injection should be given at least once daily, and retained for a few minutes, if possible, but if it cannot, and is passed at once, it will nevertheless do good. In obstinate cases, it may be of advantage to add from one-half grain to one grain of nux vomica to each injection.

The writer has used, with good results, in some of these cases, the decoction of galls, as well as a strong decoction of white oak bark and alum. He has also used the following:

℞. Acidi tannici..... gr. xx
Claret wine..... ℥ iv.
Fiat injectio.

M. Brétonneau, in order to correct the morbid condition of the rectal pouch in these cases which he called rectal constipation, and which he often found complicated with anal fissure, used with signal success, according to the testimony of his distinguished pupil, M. Trousseau, the following injection, which not only restored the organ to its normal tone and action, but also cured the anal fissure when both affections co-existed:

℞. Ext. rhataniæ..... ʒ ij.
Sp. vini rectificati..... ʒ v.
Aq. puræ..... ℥ iv.
Fiat enema.

The writer has employed with success the injection of M. Brétonneau in a number of cases, and among them several children, in which from one-half to one-fourth of the quantity only was injected.

In some of these cases the following pill, or a somewhat similar one, may be used with advantage, especially when atony of the colon exists with that of the rectum, so as to excite the peristaltic action, and soften, if possible, the fecal matter in the former, as it cannot in its entirety be so easily reached by injections. One pill should be taken at dinner or at bedtime:

℞. Extr. aloes..... gr. xxx.
Extr. nucis vomicæ..... gr. xx.
Extr. hyoscyami..... gr. xv.
Sulph ferri..... gr. x.
Ol. caryophylli..... gtt. v.
M. et divide in pilulas xxx.

Or the extract of nux vomica may be advantageously given alone, once daily, in the form of a pill, of from one-half a grain to a grain.

Galvanism.—In atony of the rectal pouch galvanism may also be employed. A properly directed current to the seat of the affection might stimulate the coats of the rectum to such an extent as to aid in restoring their lost tone and action, and thus ultimately produce normal peristalsis.

Mechanical removal of impacted fæces.—In cases in which the rectal pouch is firmly distended and blocked up by a large, hard fecal bolus, or by a large, soft, and tenacious mass, neither purgatives nor stimulating injections will have any effect toward softening and removing the former, nor dissolving and removing the latter. The only remedy in such cases is the employment of mechanical means. After dilating the anal sphincters well, under etherization if necessary, the fingers, with the aid of the rectal curette, should be used to break up and remove as much of the impacted mass as possible, and the remaining fragments should then be completely washed out by stimulating injections.

To all these means, in the treatment of rectal atony, must necessarily be added, as auxiliaries, a proper tonic diet, claret wine, exercise in open air, etc.

Atony of the anal sphincters.—The loss of tone of the sphincters of the anus, like that of the rectum or rectal pouch, and from somewhat similar causes, sometimes occurs and consists of the loss of power to some extent of their muscular fibres. In such cases, although the sphincters lose a large portion of their tonicity, yet their functional power is not altogether destroyed as it is in paralysis the result of paraplegia, in which both their grasping and retentive functions are entirely lost, so that the dejections, if fluid, will, on reaching the sphincters, escape involuntarily. The anal sphincters are much less frequently the seat of atony than the rectal pouch, but the affection in both may, and does occasionally, co-exist. When the sphincters are affected the disease is more readily detected, being external, but when the rectal pouch is the seat of the affection, it is much more liable to be overlooked, being internal.

Atony of the sphinctores ani frequently occurs in old age, and in such it is commonly called palsy, or local paralysis. It is a very troublesome and distressing affection, and often attended by prolapsus recti and eversion of the anus; and it sometimes entirely prevents the aged patient from taking any exercise on foot. It is one of the worst forms of atony of the anal sphincters, if it may in reality be so called, being so closely allied, as it were, to partial paralysis that it is difficult to distinguish between it and such an affection. This form, however, in these cases, is generally without any marked disease in the nervous centres affecting other functions also. Atony of the anal sphincter is often met with in some hysterical women, and also among hypochondriacs; and it sometimes occurs in infancy and childhood.

Among the causes of this affection may be mentioned: Exhaustion from protracted ill-health; sedentary habits; the immoderate use of alcohol and tobacco; excessive or repeated dilatation of the anus, produced by the straining efforts at evacuation in chronic dysentery; divulsion of the anal sphincters, either for therapeutical or diagnostic purposes. The affection is sometimes produced by a descent, or prolapsus of the rectum, or hemorrhoidal or other tumors of the same, which, by their continued pressure within, and their frequent passage out and in through the anal orifice, impair the contractility of the anal sphincters. In such cases, however, as a general rule, the removal of the cause will restore the sphincters to their normal tone. Among the most fertile causes of anal atony, according to some authors, may be mentioned the indulgence of unnatural congress.

By the action of the anal sphincter, the skin of the anus is disposed into radiated plaits, with intervening furrows, which extend some little distance into the anal canal, as well as out on the external surface. In atony of the sphincters, these folds or wrinkles almost or entirely disappear, or become effaced, the margin of the relaxed anal orifice will be found loose and salient, so that the finger or bougie can be passed through the anal orifice into the rectal pouch without meeting any resistance. When the atony is the result of vicious habits the anus is much excavated, as it were, and presents the aspect of a funnel. In all cases of anal atony there is a slight escape or oozing of fecal matter for a short time after each evacuation, so that it is almost impossible to observe strict cleanliness during that period.

Treatment.—In the treatment of the ordinary cases of atony of the anal sphincters, the cold ascending douche is a most valuable remedy in restoring their lost tone. It should be applied to the anus forcibly for four or five minutes, immediately after each evacuation of the bowels, and once or twice besides during the twenty-four hours. The following ointment or lotion may be used with advantage in such cases:

℞. Strychninæ sulph..... gr. x.
Unguent. aquæ rosæ..... ʒ j.
Fiat unguentum.

℞. Extr. nucis vomicæ..... gr. viij.
Alcoholis..... ʒ ij.
Aquæ ammoniæ..... ʒ j.
Fiat lotio.

Galvanism, as well as nux vomica, should also be employed in these cases.

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27 EAST FORTY-SIXTH STREET.

NODOSITAS CRINIUM; OR, TRICHORRHEXIS NODOSA.[1]

BY RICHARD COLE NEWTON, A.B., M.D.,

MONTCLAIR, N. J.

GENTLEMEN: I have chosen to speak to you this evening upon this somewhat obscure affection of the hair (mostly of the beard), because I have had peculiar facilities for studying a case of it, and because it is one of those complaints which, owing to the rather vague and unsatisfactory nature of its literature, may prove a stumbling-block in the way of anyone of us.

Beigel, in 1855, first described it under the title of "Auftreibung und bersten der Haare."[2] Wilson, however, had written of practically the same affection, in 1849, under the title of "Fragilitas Crinium." Wilks is said to have recognized it in 1852, but did not publish his observations until 1857.

In America nodositas crinium is undoubtedly very rare. Bulkley[3] met with it four times in eight thousand cases of skin disease. Of these four cases one will shortly be described to you in detail. Jackson has seen two cases.[4]

It is easy to imagine that any contribution to the clinical history of this complaint may be valuable. Its etiology, progress, and treatment are more or less involved in uncertainty.

The name of trichorrhexis nodosa is said to have been suggested by Kaposi. Other names have been brought forward, *e.g.*, clastothrix, Wilson; tricoptilosis, Divergie; trichoclasis, Fox, etc. I have ventured to suggest the name which appears at the head of this paper, Nodositas crinium, because (1) trichorrhexis nodosa is a cacophonous hybrid, an unnecessary mixture of Latin and Greek; (2) because in the affection, so far as I have been able to observe it, there is no spontaneous bursting of the hair, as the term trichorrhexis would seem to imply; (3) because the term fragilitas crinium is already in use in our nomenclature, and nodositas crinium is similar in derivation and of obvious meaning; (4) because fragility and nodosity of the hair generally coexist in the same subject;[1] and nodositas crinium, or, if you like, nodositas et fragilitas crinium, seems to me to express our meaning better, and to be a smoother and more intelligible title for the condition. I should add that Behrend has, for a similar affection (in *Virchow's Archiv*[2]), proposed the name of nodositas pilorum Smithii, which, however, he differentiates from trichorrhexis nodosa.

My first case of nodositas crinium occurred in a medical friend, who has been more or less intimately associated with me, and has been almost constantly under my observation for eleven years, ever since the disease first appeared. In the following history I shall draw largely from his own notes of the case.

CASE I.—In February, 1878, O. A—— first noticed, quite by accident, what seemed to be nits upon the hairs of his beard. The affected hairs were chiefly at the corners of the chin and over the rami of the jaw. The beard at the affected spots was peculiarly dry and lustreless. The mustache was not involved. My friend was then twenty-six and a half years of age. He was in fair health; was an interne in one of the large hospitals in New York City, and had many duties to attend to. His family history is not especially significant. His father had lost much of his hair at twenty-nine. He had been an exceptionally vigorous and active man, and had died at fifty-four, of what was said to be leucocythæmia, although A—— thinks that his father's final illness was typhoid fever.

His mother died at forty years of age, of carcinoma, apparently produced by rapidly succeeding pregnancies. He has lost two brothers of acute diseases, and has four sisters living and well. Nothing like nodositas crinium has ever been known in the family.

No suspicion of a specific taint, hereditary or acquired, can be entertained.

A—— had worked on a farm in his early life, and in college had been fond of athletic sports. He was exceedingly strong and muscular. In college he had been somewhat annoyed by cardiac palpitation. He thought that he might have "strained" his heart in the gymnasium, although probably his trouble was tobacco-heart. He has outgrown the cardiac difficulty. He has an idiosyncrasy with regard to tobacco; sometimes smoking and enjoying it, especially at times of excitement or change, as when about to undergo an examination, or upon a long journey. Then a distaste for tobacco will supervene, and A—— has gone for months or years without touching it. He has also this peculiarity, with respect to quinine, that ten or fifteen grains of the drug, taken immediately before bedtime, is a most agreeable and efficient hypnotic.[3]

In the winter of 1883 and 1884, A—— was in the Indian Territory, and was having now and again "chills." After each of these he noticed that his nodositas was worse.

To return to the history of the earlier manifestations of this curious malady. A—— states that he had had various neurotic pains during the "cram quiz" which he went through to obtain his hospital appointment. The most marked of these was an aching pain in the back of the neck. He had relinquished the use of tobacco some years before; but, having accidentally discovered that smoking would allay the pains referred to and promote sleep, he began smoking again, and went on with his quiz. He was obliged to teach most of the time while studying medicine, and had met with some rather serious disappointments. His own opinion is that severe nervous strain brought on the nodosity.

He showed himself to Dr. Bulkley in 1879. He had then shaved his beard for over a year, under the impression that the nodositas would pass away of itself, or be

[1] Extract from a paper read before the Montclair Medical Society, February 8, 1889.
[2] Jackson: Diseases of the Hair and Scalp, p. 128.
[3] Ibid., p. 129. [4] Ibid., 133.

[1] Ziemssen's Handbook of Skin Diseases, pp. 429-431.
[2] Jackson: Diseases of the Hair and Scalp, p. 142.
[3] Dr. Beigel (Reynolds' System of Medicine, vol. v., p. 379) calls attention to the direct action of this drug upon the sympathetic nervous system in functional nervous disease, and states that Duméril, Demarque, and others are of similar opinion.

cured by shaving. Dr. Bulkley, after carefully examining the case, assured A—— that there was nothing parasitic about it, and directed him to shave for three months, using every night a thorough inunction of vaseline, and then to let his beard grow, still using the vaseline. This treatment was faithfully carried out, and, while it mitigated the condition, it did not cure it.

It would weary you were I to give you a detailed account of the various measures which my friend resorted to for the cure of his nodositas. He had tried complete and repeated epilation of all the diseased hairs (which promptly grew again), mercurial inunctions in several forms, pustulation with croton oil, boric acid ointment, chrysarobin, carbolic acid, carbolic salve, etc. At my suggestion he used sulphur ointment faithfully for three months, all to no purpose. He also took arsenic until its constitutional effects appeared; afterward iodide of potash to a like extent; then tincture of iodine. He had also taken strychnine. In 1885 A—— was in excellent general health, but his nodositas was just the same, or worse. It occasionally appeared in his hair, but always disappeared from there spontaneously in a short time. From the beard, however, it was never for any length of time absent. Always, after any manifestation of malaria, the trouble was worse. A—— says when he would allow his beard to grow, in a period of time varying from ten days to six weeks, the nodositas would appear; in two or three days more the hairs would split and break, and then would act like foreign bodies, setting up considerable itching, which could only be relieved by shaving.

The nodositas never appeared in the mustache.

In 1885 he tried the liquor potass. locally, also cantharides, glycerine, and bay-rum, and two secret remedies —the last more to please his friends than because he had any faith in them. He then gave up the battle and has shaved his chin and part of his cheeks at least two or three times a week ever since.

In the summer of 1888 another functional nervous disturbance showed itself, *i.e.*, insufficiency of the internal recti muscles, for which my friend consulted Dr. C. S. Bull. This is now very much better and his general health is excellent. His weight is one hundred and ninety-eight pounds, and he is, as he always has been, a very active man. His nodositas is better, in that he can wear a moderate-sized pair of side-whiskers.[1]

Case II.—In 1885–86 I had a patient, forty-five years of age, E. R——, who was fairly well nourished, but somewhat anæmic. His mother, after suffering from her nerves all her life, died insane. His brother was, as E. R—— expressed it, "cranky." His father had reached a green old age. When I met E. R—— he was always constipated, was subject to terrible migraine, which was accompanied by nausea, strabismus, and diplopia. Morphine, as a rule, only excited him. He smoked in great excess and had a nervous polyuria. He was a man of considerable intelligence, and from his description of a disease of his beard, the like of which he had never seen, I knew at once that he had suffered from nodositas. From this he had recovered a year or two before I saw him, and attributed his cure to a nostrum containing sulphur. His general health had, however, improved greatly, and his weight had increased forty pounds since his nodositas had appeared. There was, to my mind, always an hysterical element in his nervous troubles. There was no reason to suspect syphilis.

I have related with some minuteness two cases of nodositas crinium. I will quote Dr. Michelson's[2] conclusions as to the nature of this affection.

1. "The above mentioned expansions and fissures in the course of the hair-shaft are not separate diseases, but a morbid symptom—the expression of a morbid dryness and brittleness due to atrophy."

2. "Broom-like fissuring[1] and division of the shaft into larger longitudinal splinters are equivalent processes; both are initiated by the loss of the cuticle; they are often combined and largely merge into each other."

3. "The beard is the region of predilection of this disease, but its occurrence in the scalp is by no means rare. It is less conspicuous here on account of the smaller dimensions of the nodules."

As you will observe, Michelson[2] hardly dignifies this complaint by designating it a separate disease. In a case like O. A——'s, where the subject of nodositas seems to be in almost perfect health, we can hardly regard the affection as a serious one. A——'s detailed description of the gross and microscopical appearance of the hairs in his beard tallies closely with the conclusions of Michelson's given above, as did also E. R——'s.

The hairs were disorganized, swollen in places, split and fissured, and there is air not only in the shaft but in the root. Dr. Van Harlingen[3] states that air is normally in the shaft, and this air he says communicates with the atmospheric air. When the air gets into the root the hair is disorganized and dies.

Dr. Wolfberg[4] has a theory that nodositas is produced in the beard merely by rubbing it. This hypothesis is scarcely tenable when we reflect upon the numbers of people who habitually rub or fondle their whiskers and the great rarity of nodositas. Eichhorst[5] seems to attribute the affection to fatty degeneration of the medulla of the hair-shaft.

In conclusion, gentlemen, I am of opinion that the complaint is a pure neurosis and of little significance as regards the general health. One of my cases was a man who has not been sick in bed a day in twenty-one years, and who has always done considerable hard work, both physical and mental. He is undoubtedly prone to functional nervous disorders, from which he shows a strong disposition to recover. My second case showed a more marked nervous history; but a much more tractable nodositas.

I wish that I could give you some definite directions for the treatment of this disorder. All external applications whatsoever seemed useless in O. A——'s case. In E. R——'s the only treatment made use of was the lotion containing sulphur, and E. R—— was sure that it had cured his beard. If I meet another case I shall try cod-liver oil and phosphorus, as is recommended for alopecia areata. I shall use no external applications except occasionally something very bland, perhaps containing a little sulphur. O. A—— believes nux vomica taken internally to the point of toleration did his beard good; and perhaps it did. I should exhort my patient not to worry about his beard, but to shave with as good a grace as possible, and to take good care of his health; as this improves no doubt the nodositas tends to disappear, especially if the patient grows more fleshy. In this connection it may be worth while to call attention to Wilson's theory,[6] that baldness is commoner in men than in women, because of the thicker layer of fat which the latter wear underneath their scalps.

The Treatment of Corns.—Dr. C. McDermott writes to the *British Medical Journal* that a saturated solution of salicylic acid in flexible collodion is an excellent remedy for corns. The corns should be painted twice a day. It takes about twelve days for their complete removal.

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[1] Dr. Duhring relates a case of atrophy of the beard, similar to A——'s, in the American Journal of the Medical Sciences, July, 1878, p. 88. The condition was much more serious. The patient, also a young physician, thirty-three years of age, was in poor health and no nodosities were present, at least after Professor Duhring saw the case.

[2] Ziemssen's Handbook of Skin Diseases, pp. 429–431.

[1] Nodositas ut fragilitas crinium, supra.

[2] Op. cit.

[3] Annual of the Universal Medical Sciences, Sajous, series of 1888, vol. ii., p. 373

[4] Medical Record, December 20, 1884, p. 683.

[5] Jackson: Diseases of the Hair and Scalp, p. 134.

[6] Vide American Journal of the Medical Sciences, April, 1868, p. 47

Clinical Department.

PLACENTA PRÆVIA, WITH SPONTANEOUS ARREST OF HEMORRHAGE.

By M. A. DUMOND, M.D.,

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In view of the great mortality attending placenta prævia, I take the liberty of presenting the following unique case, as I have no knowledge of a similar one. I was called in haste, on the night of December 9th, to see Mrs. K——, twenty-three years of age. Pregnant about seven and one-half months with her third child, she had been suddenly awakened from sleep by a very profuse hemorrhage, which had ceased before I arrived. My suspicions of the cause of the flooding were that it was from an abnormal position of the placenta, and this view was confirmed by examination, as I found that peculiar doughy feeling imparted to the touch that is so indicative of trouble ahead. I advised them of future floodings, and, as she was some four miles from a physician, with roads that are almost impassable at this season of the year, I was very anxious on her account. Again, on the night of December 21st, there was another serious hemorrhage. The case now looked serious, and I asked to have my friend Dr. Murray, of Van Etten, see her with regard to the advisability of inducing labor. We concluded to hold on a short time and await results. I was again summoned, on the night of January 2d, as labor-pains had commenced, and with them, as I had anticipated, flooding. Upon my arrival I found the child in the hands of the nurse; the mother weak, but in fair condition.

Upon inquiry I found that with the first appearance of pains there was a severe flooding, which stopped, however, after a strong contraction. Then the question was, what was the cause of its sudden stopping? On further inquiry I soon found out. The child was born feet first. The contraction had forced it down and separated the placenta on one side of the uterine neck, and thereby made an efficient tampon. The case, of course, after that time presented nothing of interest, except that the nurse was fortunate enough to deliver the child in time to save it as well as the mother. Here is a case in which an uncommon presentation, to say the least, saved the woman's life.

A SUB-SPINOUS DISLOCATION OF THE HUMERUS REDUCED AFTER FIVE MONTHS, WITH GOOD RESULTS.

By J. E. MOORE, M.D.,

MINNEAPOLIS, MINN.

Mr. M——, aged forty-three, came to my clinic at the University on January 15, 1889, with a dislocation backward of the left humerus of five months' standing. He gave no very clear history at that time of the cause of the dislocation, but said that it had not been recognized by the attending physician until two months after the accident, when an unsuccessful effort was made to reduce it under ether.

The head of the humerus could be felt distinctly on the dorsum of the scapula, beneath the spinous process. Duga's test failed because the inner condyle of the humerus could readily be brought against the side of the chest. The shoulder was quite sensitive, motion limited, and arm almost useless. Chloroform was administered, and after breaking up very firm adhesions I succeeded in overcoming the deformity by placing my heel against the coracoid and acromion processes and making traction forward and outward on the arm. When the arm was strongly adducted, or rotated inward, the head of the humerus slipped out of the glenoid cavity. It was very easy to reduce the deformity after the first time, but very difficult to keep it in position. Adhesive strips were applied in such a manner as to draw the upper end of the humerus forward and the lower end backward. The next morning the parts were just as they had been left, but in the evening the deformity had returned, although not so marked as before.

On January 19th chloroform was again administered and the head of the humerus brought into proper position. The patient was then brought to the edge of the table, lying on his back in such a manner as to fix the scapula. The arm was then extended to a right angle with the body, and the back of the hand pushed well down toward the floor.

While an assistant held the arm in this position I folded my hands over the back of the humerus close to the patient's body, and made very strong traction upward and forward. I felt a tearing as if more adhesions were being broken up, and the head of the humerus slipped well forward. Adhesive strips were applied as before, and the patient was put to bed. After this no difficulty was experienced in keeping the parts in place.

January 24th, was summoned hastily, the messenger stating that my patient was crazy and suffering great pain. I then learned, for the first time, that he was subject to occasional attacks of epilepsy, and that he had had three spasms in succession that morning. I found him sitting on the bed, complaining of great pain. Upon examination I found the adhesive strips just as I had placed them and the shoulder all right. He then told me that it was not that shoulder but the other one that gave him pain. Upon examination I found the right shoulder dislocated directly backward, just as the other one had been. It was readily reduced by manipulation.

His brother informed me that the former dislocation, as well as this one, had taken place during a spasm, and while the patient was upon his back in bed. He stated that he had been with the patient both times, and that no great effort had been made to hold him.

I conclude, therefore, that the dislocation had been caused in both instances by muscular action alone. After two weeks I began passive motion, and at present writing, March 8th, he has almost perfect use of both arms.

CONSERVATISM IN MINOR SURGERY, WITH SPECIAL REFERENCE TO INJURIES OF THE FINGERS.

By O. J. FULLERTON, M.D.,

WATERLOO, IA.

Surgery becomes conservative when it tends to alleviate suffering without resorting to operative interference. From the foregoing statement it will justly be inferred that I mean by "conservative surgery" any plan that offers a reasonable assurance and a fair prospect of usefulness without involving a risk of life.

To deprive the human frame of any of its component parts, no matter how small, not only robs it of a portion of some form of force, but disturbs, as well, the harmonious interblending of its original and natural operative functions and usefulness. A finger may seem a small and unimportant member, yet of its utility and beauty there can be no doubt. Sometimes it is very necessary to have a finger as long as possible, and even the saving of a quarter, or an eighth of an inch, to the physician, musician, dentist, penman, and many others, is highly important.

The public are beginning to realize that the useful little member is sometimes needlessly amputated. Therefore, let there be no act of the surgeon which shall deprive the hand of any of its members, or in any measure impair its usefulness, unless there exists an absolute necessity for it.

The interests of humanity demand that we should realize the advantages of conservative surgery in all injuries. There is no doubt in my mind that many fingers, or parts thereof, are sacrificed in primary amputation

which could and should be saved by proper conservative treatment. I am persuaded that surgeons too often feel that their business is to cut whenever opportunity presents itself, forgetting that they would more fully and creditably perform their duty if they operated only in the event of no alternative.

Surgery is an enticing and brilliant art, covering with fame the men who have done the most to make it such; and yet it has a dangerous tendency, especially in the minor operations, because of the seeming unimportance of the members operated upon.

That there have been some failures in the effort to save counts for nothing. Let there be a halt called in this branch of surgery, and a united effort by the profession to turn the tide toward what I have termed "conservatism" in minor surgical operations. And true it must be that many of the results that are now unsightly, shocking, and fatal to the members operated upon would be less frequent.

Then carefully aid nature, the "great physician," and note the monuments of repair silently attesting and demonstrating the wonderful repairing power of Him who heals.

The class of individuals among whom "conservatism" is the most often called for are railroad employees and employees of our vast manufacturing establishments, whose injuries comprise simple and compound fractures, luxations, contused and lacerated wounds. And it is often not only difficult but impossible to determine the real extent of injury done to the soft parts until a sufficient length of time has elapsed for circulation to be re-established.

After careful perusal, I have been able to find but little surgical literature with special reference to surgical appliances and dressings of the fingers, except that which treats of the subject in a general way, and of which we all have knowledge I therefore wish to call your attention (so far as I know) to an original appliance and mode of dressing which, in my opinion, if adopted, will be the means of saving many a useful finger that would otherwise be lost or amputated.

For lack of a similar and more perfect splint in the market, I have been using for some time, in this particular class of injuries, a splint and dressing which may be prepared as follows. Securing an assortment of sizes of the common paper shot-gun shells, ranging from numbers eight to twelve, inclusive:

First, remove the capped end of the shell.

Second, remove about one-third of the surface of the shell by cutting from end to end in parallel lines, leaving the remainder of the shell, about two-thirds of which is in the form of a trough with rounded bottom and corners. We shall then have formed a slotted flexible tube. (I also believe that a similar splint, manufactured of wood or straw pulp, saturated with an antiseptic solution —the splint being of sufficient strength and size to fit any member of the body—would commend itself to the favor of the surgeon.) Always select a size that will nicely fit the finger.

Third, take a piece of surgeon's medicated lint, of sufficient size to encompass about two-thirds of the injured finger, saturate it with iodoform and glycerine, one part of the former to twenty of the latter, and place the prepared lint in the slotted tube.

Fourth, after a thorough antiseptic cleaning of the wound, if any, reducing any fractures or dislocations, and removing all hopeless fragments or spiculæ of bone, and, while extension is made by an assistant, place the finger in the slotted tube, securing it by adhesive strips passed entirely around the finger and tube, near each extremity. Dress antiseptically, and place in a sling.

Claims for this dressing.—First, it is neat, light, cheap, and simple. Second, it is flexible, and therefore allows for extension from swelling, by simply cutting adhesive strips. Third, by cutting a fenestra opposite the wound it may be inspected and dressed daily without removing the splint, at the same time affording the proper drainage. Fourth, the splint being in the shape of a slotted tube, and when applied giving both anterior and posterior, as well as lateral, support to the injured member, thereby securely retaining the fragment in perfect apposition. Fifth, the material of which this splint is constructed being such that the surgeon can, with a knife, in a moment adjust or perfectly fit the same to the injured member.

If, then, we have succeeded in directing your thoughts in a line that, when mature, will be the means of saving, for some unfortunate, only a fraction of his least finger, we will feel our efforts have not been in vain.

HOW TO STAIN AND TO AVOID DECOLORIZING THE TUBERCLE BACILLUS.

By K. A. NORDERLING, M.D.,
ROCKFORD, ILL.

For an expert there is not much difficulty in finding these microbes, even if they should be present in very small numbers. For the less experienced, however, there is considerable difficulty in their discovery on account of the great facility with which they are decolorized by the nitric acid if the prepared cover-glass should be in only a few seconds too long contact with the acid. Especially when the bacilli are very few in number this decolorization readily takes place, and they consequently become invisible.

The patient is then, on account of the negative result, pronounced free from tuberculosis, when he is in reality suffering from this disease.

Therefore, to be able to discover the bacilli, we must know of some acid or other agent that does not decolorize these microbes even after having been a long time in contact with them.

Such an agent we possess in oxalic acid.

The staining is done in the following way: One part of aniline oil is thoroughly shaken for a few minutes with ten parts of distilled water, and then filtered through a filter previously moistened with water. To the perfectly clear solution is then added four or five drops of a saturated alcoholic solution of fuchsin. In this solution (fuchsin aniline water) is immersed the prepared cover-glass. The solution is slowly heated a few minutes until vapor appears, then the cover-glass is taken out and washed in distilled water, and afterward immersed in a saturated solution of oxalic acid. It must remain here until it is completely decolorized, when it is taken out, dried, and immersed in a weak solution of methylin blue, until it has received a light-blue color (about one-half to two minutes). After this it is dried again, and examined in Canada balsam with a homogeneous immersion-lens. All is now colored blue except the bacilli, which have a beautiful red color.

I have tried several methods of staining, but in none of them are the bacilli seen so plainly and brilliantly as when the above method is used.

Darwin Consults a Doctor.—A very pathetic story is told by Darwin in the life of his grandfather, Dr. Darwin, of Derby. One day a patient entered the consulting-room of a London physician and detailed the symptoms of his illness. It was an obscure and difficult case, of a kind that was only imperfectly understood, and the London doctor confessed himself fairly puzzled. He could only say that the patient was in a most perilous state. "There is only one man in England who understands the disease," said the London doctor, "who understands cases of this sort, and you should go and consult him. It is Dr. Darwin, of Derby." "Alas!" was the answer, "I am Dr. Darwin, of Derby."—*Murray's Magazine.*

Comfort for the Young Practitioner.—The wise patient now saith unto himself: Why should I pay for advice when the free clinics are open unto me, for is it not written that a fool and his money are soon parted?

Progress of Medical Science.

THE TREATMENT OF FIBROID TUMORS OF THE UTERUS BY GALVANISM.—This subject, which is engaging the attention of so many gynecologists at present, has been studied by Dr. F. H. Martin, of Chicago, who publishes the following general summary of his views (*The Journal of the American Medical Association*, January 5, 1889). 1. A means of generating a continuous current of electricity of steady and uniform character, that can give an actual current-strength through a resistance of 200 ohms, of 500 milliampères, is necessary in order to obtain all the benefits of this treatment. 2. Fibroid tumors of small size can be completely absorbed by the proper application of strong currents of galvanism. 3. Hemorrhages from hemorrhagic fibroid tumors can be promptly cured by the local coagulating effect of the positive pole when it is applied intra-uterine. Severe neuralgias so often accompanying these troubles can invariably be relieved by three or four applications of this treatment. 4. When the cervical canal cannot be entered by any form of intra-uterine electrode, flexible or otherwise, after repeated trials, a negative galvano-puncture should be made into the presenting part of the obstructing mass of the tumor, and an artificial canal opened, which is to take the place of the impenetrable uterine canal in all subsequent treatments. 5. The intra-uterine electrode should in all cases be negative, unless there is hemorrhage or excessive leucorrhœa, when the positive pole is always required. The same patient may, however, present symptoms demanding the use of both poles at successive operations. 6. The strength of the current should depend entirely upon the amount of active surface of the internal electrode, and should be 25 milliampères for each square cubic metre of active surface in actual contact with the endometrium. If more is used the concentration of the current will be sufficient to cause troublesome cauterization, if less is used the concentration at any one point will not be sufficient to cause the necessary coagulation for checking hemorrhage. 7. The duration of the treatment should be five minutes of the maximum current required. 8. The number of operations is necessarily dependent upon and influenced by the result to be accomplished. A severe hemorrhage can be checked, and symptomatic relief can often be accomplished by four or five séances, while a general reduction of the tumor necessitates many operations, varied, of course, according to the size and location of the growth. In some cases of large multple tumors a relief of symptoms, or symptomatic cure, must be accepted as a substitute for an actual cure. 9. The operation should be intramenstrual, if possible; if hemorrhage is continuous, however, operate during flow. The séances can occur as often as every day with the system of concentration adopted that enables one to attack different portions of the canal at succeeding treatments, or it can be given with advantage as few as once a week. 10. Since the adoption of the flexible intra-uterine electrodes and Dr. Apostoli's vaginal galvano-puncture, extra-uterine puncture should be regarded, if at all, only as a last resort. 11. Galvano-puncture needles, and the internal electrodes, should be constructed of material that is not injured by coming in contact with strong carbolic acid, or 1 to 1,000 bichloride mercury solution. All internal electrodes should be thoroughly scrubbed with a nail-brush and soap and water after each application, and allowed to remain in one or the other of these standard antiseptic solutions until they are to be employed again, when they should be washed in a weaker solution of the same before using. Before a vaginal puncture is made the vagina should be thoroughly wiped out with a 1 to 3,000 bichloride solution. 12. There is no excuse for any percentage of mortality in the proper application of this treatment. While Dr. Apostoli has had two deaths in 275 cases, he candidly admits they were due to avoidable accidents rather than to any legitimate procedure of the operation. 13. In experienced hands, and by the adoption of the present means of concentration, the most delicate and sensitive patient can receive, without experiencing any severe discomfort, all the benefits to be derived from this valuable treatment.

DISINFECTION OF THE RESPIRATORY PASSAGES WITH MYRTHOL.—The Vienna correspondent of the *New Orleans Medical and Surgical Journal* says that, hitherto, inhalations of turpentine were used for disinfecting the air-passages, or for combating putrid processes. Setting aside the frequent disagreeable after-effects which were produced by this medication, the results were also not very favorable. In spite of the inhalations, a patient affected with putrid bronchitis would infect a whole ward in a hospital. Dr. Eichhorst recommended a medicament which, taken by the mouth, was able to meet all these inconveniences, and, moreover, favorably influenced the appetite and the general condition of the patient. This drug, myrthol, had a rapid and sure effect. It was that part of the myrtle-oil which boiled at from 320° to 340° F., and which represented a quite clear fluid of an aromatic odor. It had formerly been recommended as a deodorant in the case of bronchial catarrh. According to the present recommendation it was the best medicament for rapidly and surely combating the putrescence, and for removing the bad odor of the breath and the secretions. When a gelatine capsule containing two grains of myrthol was taken, the breath distinctly smelled of myrthol after the interval of an hour, and this smell could also be perceived twenty-four hours, and even forty-eight hours, after the administration. In putrid processes much larger doses were required; in most cases two capsules were administered at the interval of two hours. There was no disgust against the drug on the part of the patients. Though myrthol proved very effectual in combating the putrid process and the bad odor connected therewith, it was quite ineffectual for preventing an infection with tubercle bacilli, as tuberculosis developed even when myrthol was used.

MORELL MACKENZIE ON HYPERTROPHY OF THE TONSILS AND ITS TREATMENT.—Chronic tonsillitis, or hypertrophy of the tonsils, proceeds from two causes. A large number of the cases are the result of a low form of inflammation occurring in childhood. The structure in childhood is very prone to become inflamed. If the tonsils are considerably enlarged, it is important to remove a portion of each. You should never speak of "cutting out the tonsils," as this sounds very alarming to the patient and his friends. Say that you mean to remove only "the diseased and enlarged portion." It is a consideration when you should do this. How much enlargement should there be before the operation is performed? First of all, the question of size is entirely relative. In a large throat the tonsils may grow to a considerable size, and the patient still do quite well. In a smaller throat this would not likely be the case. If the tonsils touch each other you can have no doubt as to the propriety of taking away a piece. If adult patients come to you with the tonsils slightly enlarged, it is an important question whether you should cut off a portion or not. If the enlargement is associated with frequent attacks of acute inflammation, you ought then to cut away a piece. There is another condition which requires a similar proceeding. When the follicles of the tonsil are much enlarged, you cannot cure it except by taking off a section, which may be not more than one-eighth of an inch thick. You thus clear away the walls of the deep follicles and get a flat instead of a "worm-eaten" surface. As to the method of operating, many surgeons do it with a bistoury, and Sir William Ferguson, a great surgeon, for whom I had the greatest admiration, used to perform it in this way, but it was terrible to see the patient struggling with the mouth half-full of blood before the operation was completed. Great surgeons will do all they can with a knife instead of what

they call a "machine." I always perform the operation, however, with "a machine," a tonsillotome. The particular form I use is a modification of Physick's. The great advantage of this is that its mechanism is quite simple, and my modification enables the handle to be fixed on either side of the blade, so that the operation may always be performed with the right hand if the operator desires. As a general rule lightness of touch is the chief desideratum in operating, but in tonsillotomy it is the reverse. Heaviness of touch is the important thing. The tonsillotome must be pressed well over the tonsil, which is also to be projected into it by pressure with the left thumb placed under the angle of the jaw. I once had a colleague who could do very little else, but he took off tonsils marvellously, and as I watched him I observed that it was this heaviness of touch that made him so successful. If you don't attend to this you will not take off nearly so much as you desire. Patients have come to me a week or a fortnight after the performance of the operation by another surgeon, saying that the tonsil had been removed but has grown again! This, of course, means that enough was not removed at the operation. It is most important to take off enough. Hemorrhage from this operation is rare, but it has occurred, and the carotid in some instances has had to be tied. I once had a serious hemorrhage to deal with some twenty-five years ago. The usual styptics, and even the cautery, failed to relieve it. At last I tried a remedy, which I have used ever since with perfect success. A chemist had informed me a short time before that a small quantity of gallic acid would prevent tannic acid dissolving. I mixed two parts of the tannic and one of the gallic in a little water, and gave the patient two teaspoonfuls, telling him to sip them slowly. The bleeding stopped almost at once. We have since used the same preparation at the Throat Hospital, and always with perfect success. The patient must be told to *swallow* the liquid, not gargle. Application with a brush will do no good. He should swallow the fluid slowly, as if it were difficult to get it down, and must on no account wash out his mouth or gargle.—*Edinburgh Medical Journal*, January, 1889.

Tubercle in the Aorta.—Dr. Dittrich reports a case of acute miliary tuberculosis in a boy, aged twelve, in which the source of general infection appeared to be the rare condition of tuberculosis of the aorta. To the posterior wall of the ascending aorta adhered some tuberculous lymphatic glands, from which the tubercle had spread into the coats of the vessel. Bacilli were found both in the glands and in the aortic wall, and it is assumed that they were disseminated through the blood-stream by direct detachment from the intima of the vessel.—*Zeitschrift für Heilkunde.*

An English Confirmation of Koch's Doctrine Regarding Cholera.—A communication of considerable importance on the subject of Asiatic cholera was made recently to the Royal Society of Edinburgh. The paper, the joint work of Dr. Neil Macleod, Edinburgh, and Mr. Walker J. Miles, F.R.C.S., was read to the Society by Dr. G. Sims Woodhead. The work was in part carried out in Shanghai and in part at the Royal College of Physicians' Laboratory, Edinburgh. It had for its object more especially the testing of Koch's statements regarding the comma bacillus. It was found possible to demonstrate the bacillus in 40 out of 44 cases of cholera, of which 30 had terminated fatally. The conclusions reached by the observers are as follows: 1. The comma bacillus of Koch is invariably present and associated with certain changes in the small intestine in cases of Asiatic cholera. 3. There is no evidence to show that it is a normal inhabitant of the human alimentary canal, and therefore no proof of the assertion that it is a result of the disease. 2. The means used to introduce the comma bacillus into, and those used to lessen the peristalsis of the small intestine of the guinea-pig, cannot be regarded as causing appearances like those of Asiatic cholera, or as causing the death of the animal, far less a mortality of over sixty per cent. 4. Pure cultivation of the comma bacillus introduced into the stomach under certain precautions described are pathogenic to the guinea-pig. 5. Injected with similar precautions, the contents of the ileum from these animals killed by injection of pure cultivation of the bacilli act in the same manner as pure cultivations of that organism. 6. The organism multiplies in the small intestine of the animal, and there are associated therewith changes similar to those in man in Asiatic cholera. 7. As there are conditions which favor the passage alive of the bacillus through the stomach of the guinea-pig, and also conditions which favor its multiplication in the small intestine of that animal, so in man there cannot be a doubt that the organism finds conditions favorable to its entrance alive, through, in all probability, the mouth and the stomach. 8. There is strong evidence, therefore, for regarding the comma bacillus of Koch as the cause of Asiatic cholera.—*The British Medical Journal.*

Is Inflammation always due to Microbes?—Professor Th. Leber, of Göttingen, has lately been engaged in some investigations having for their aim the solution of the question whether suppurative inflammation is exclusively produced by micro organisms, or whether it may also be set up by purely chemical substances (*The Lancet*). By means of injections of competely sterilized cultures of staphylococcus pyogenes aureus into the anterior chamber of the eyes of rabbits, he was able to induce intense suppurative inflammation. This, however, differed from similar inflammation produced by living staphylococci, inasmuch as it showed no disposition to spread; and even when the local appearances were of a very severe nature the morbid process rapidly came to an end. From staphylococcus cultures different chemical crystallized substances were obtained, which were shown by their reactions not to be identical with the ptomaïne obtained by Brieger from staphylococcus cultures, and which he, in consequence of its property of setting up suppurative keratitis, denominated "phlogosin." Besides, Professor Leber was able, by means of his investigations, to show that when suppuration was set up the pus-corpuscles make their way in a centripetal manner toward the spot where the inflammatory stimulus exists. He found that capillary tubes containing a small quantity of a substance capable of inducing inflammation when introduced into the anterior chamber of the eye became filled after a time with pus, while no pus at all could be detected in the eye itself. Professor Leber considers this attraction of leucocytes by chemical substances as analogous to the attractive influence of certain chemical substances in vegetable cells which has already been observed, and which has received the name of "chemo-tactical action." Finally, Professor Leber finds that in suppurative inflammation fibrin and the tissues become dissolved by means of leucocytes; for example, pieces of cornea impregnated with sterilized staphylococcus culture, when introduced into the anterior chamber of the eye, became rapidly dissolved. It was found, moreover, that pus, when free from bacteria, enjoys the property of causing a local liquefaction of nutritive gelatine. Professor Leber recognizes in these properties of leucocytes (their ability to absorb foreign bodies and to dissolve fibrin and tissues) a valuable defensive arrangement which tends to shield the organism against external injuries. He would therefore look upon inflammation as an "important process, which consists in rendering the organism obnoxious to external injurious influences."

Treatment of Gonorrhœa by Thallin.—Dr. John McCan reports a case (*Dublin Medical Journal*) of cure of gonorrhœa in three days, by the use of five per cent. sulphate of thallin bougies. Dr. McCan announces his treatment as a new one; thallin has, however, been used for some time for this trouble.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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CANCER OF THE RECTUM.

THE older view, and the view of many conservative surgeons now, has been that cancer of the rectum should not be operated upon unless it was within reach of the fingers, *i.e.*, involved the lower two and a half or three inches of the rectum. This rule, however, is now far from being observed. The operations devised by Kraske and by Alexander are expressly designed to attack growths in higher parts, and these operations have been successfully employed.

It is a matter of common note, however, that although the operations upon the rectum are not now attended with so large a direct mortality as formerly, yet, as regards relief from the disease, the success has not been so great as in operations upon the open surface of the body. And the treatment of rectal cancer by the surgeon is still far from encouraging.

Dr. Hildebrand has recently presented a statistical review of the work done in this line at the Göttingen Clinic (Dr. Henry Koplik, *Annals of Surgery*, February, 1889). There were sixty-nine cases of carcinoma recti whose histories were studied. The large majority of cases of carcinoma of the rectum (fifty-four per cent.), in the clinic in question, occurred between the ages of forty and sixty years. Thirty per cent. of these cases occurred between sixty and eighty years. As regards sex, 31.7 per cent. were females. Of sixty-nine cases of carcinoma of the rectum upon which this paper is based, only two were confined to the external anal ring. Among the tumors three melanotic carcinomata were found, a rare form of growth. Most of the carcinomata of the rectum were in form of a ring-like stricture, or, again, the growth took the shape of a cuirass as in the breast. Excluding the inoperable cases, in 54 operated cases the lymphatic glands of the surrounding area were affected in 24 cases.

Of the 69 cases which came to the clinic for operation, 15 were regarded as inoperable. In all cases where the carcinoma was confined to the anal ring, extirpation of the tumor with or without the removal of the external sphincter was performed. If the mucous membrane of the rectum was compromised, extirpation of the rectum was resorted to. When the sphincters were not affected, resection of the rectum alone was resorted to. There were 2 cases of the first, 13 of the second, and 39 of the third class. The operation of Kraske was not performed in any of the cases in the Göttingen Clinic.

The rate of mortality immediately following this operation (57 cases) was thirty-five per cent. (20 cases). During the past six years the mortality only reached 14.9 per cent. against thirty per cent. of the previous six years.

Of 54 patients, 3 remained free from symptoms for more than three years, 6 for more than two years, and 8 over one year, and have, up to date, no return of disease. Of the whole number of patients, including those still living with a return of disease, at least thirty-one have lived free from symptoms for a period of three years. There are only three cases of definite cure up to the date of the statistics (ten per cent.). In the majority of cases recurrence of the disease occurs early—during the course of the first half-year after operation.

Dr. Hildebrand rightly says that the operation for carcinoma recti is dangerous to life, and rarely gives prolonged relief, while it usually and necessarily destroys the functions of the parts. Still the outlook is better than when Billroth reported 45 cases with 19 deaths, or nearly fifty per cent., instead of the present rate of ten or fifteen per cent.

THE EXPERIENCES OF MEDICAL EXAMINING BOARDS IN ALABAMA.

THE State of Alabama is one of those few joyous areas of the earth's surface that is without a medical college. It has, as an offset, however, an excellent medical journal, a well-organized State Board of Health, and a State Medical Association which has the power of appointing a Board of Censors, and County Boards of Examiners. These organizations examine, and, if proper, license applicants for the practice of physic.

That such licensing board is useful is shown in the reports of the work of these Boards, some interesting abstracts from which are given in the *Alabama Medical and Surgical Age* of recent date.

In reviewing the examination of a graduate of a Tennessee college, the Board says: "Applicant is utterly ignorant of both medicine and English, and the wonder is how any college could graduate, or board license, such a man."

The same Board says of another Tennessee graduate: "He ought to have been rejected on his spelling, though there was sufficient reason without that. His answers are not only incomplete in every case, but are often incorrect."

Of two Georgia graduates, the Board says: 1. "The applicant exhibits a lamentable ignorance of medicine." 2. "He answered almost nothing."

It says of the examination of one of the graduates of a Kentucky college: "Applicant shows the most astonishing ignorance of medicine, and, if he carries into practice some of his ideas of treatment, will materially diminish the population of his community."

A NEW FORM OF TUBERCULOSIS.

IN 1883 Malassez and Vigual discovered a peculiar form of tuberculosis not due to the special microbe described by Koch. This they called "tuberculosis zoogléique," on account of the peculiar mode of growth of the micro-organism. In 1885 Eberth discovered a "mycosis" of the guinea pig and a pseudo-tuberculosis of the rabbit, which seemed

to resemble the zoogleic tuberculosis of Malassez and Vigual.

Last year Charin and Rogers described a "pseudo-tuberculosis bacillaire."

The progressive granuloma described by Manfredi in 1888, and the "syphilis of animals" of Taguchi and Disse, appear to resemble the forms already referred to. In the last number of the *Archives de Médecine expérimentale*, MM. Grancher and Ledoux-Lebard have investigated the whole subject, and claim to identify the zoogleic tuberculosis of Malassez and Vigual with the pseudo-tuberculosis of Charin and Rogers.

Their results leave little doubt that there is an infectious microbic disease resembling in many respects miliary tuberculosis, but not due to the common tubercular bacillus of Koch. This disease has been produced in animals repeatedly. It is not unlikely that it also affects man, since the original virulent matter used by Malassez and Vigual was of human origin. Grancher and Ledoux-Lebard obtained their first cultures from garden-earth upon which gelatine cultures of Koch's bacillus had been deposited. Upon this distilled water was allowed to drip, and the filtrate was used for their first inoculations. Injected into the abdomen, these cultures caused death in four to seven days, from peritonitis with miliary granulations of the liver and spleen.

The granulations were found to consist of colonies of microbes easily stained with methyl blue. Rabbits inoculated subcutaneously died in five to six days, with tuberculosis of the liver, spleen, and lung, the colonies being deposited in masses of various sizes.

The colony-growth of these microbes was only one stage of their life. They caused local degeneration of the infiltrated parts, and then themselves disappeared. The masses are composed first of short bacilli, about one micromillimetre long, rounded at the extremities, and secondly of micrococci.

The existence of this special and virulent form of tuberculosis is at present a matter of scientific interest only. But it seems probable that man may, and does sometimes, suffer from a "tuberculosis zoogléique."

THE VALUE OF ELECTRICITY IN THERAPEUTICS.

Our readers have doubtless read with interest the letter of Dr. R. W. Amidon in the last issue of The Record, and will read, in the present issue, the letter of Dr. Starr, and the courageous criticisms they contain. They will doubtless agree also that, while a good deal of silly stuff has been written regarding the efficacy of electricity, the position of American physicians has not by any means been that of credulity. Over two years ago, in an editorial (Medical Record, February 26, 1887), we said: "Electricity has a pain-allaying power, and relieves a number of neuralgic pains. But as to paralysis we are still in the dark. We know that after motor paths are broken in brain, or cord, or periphery, there is a process of separation which follows naturally by certain laws. But do electric currents influence this process of repair? Of this there is as yet absolutely no demonstrative evidence. Some cases seem to begin their improvement with the beginning of electrical treatment, others seem to cease their downward progress under it. But these effects are not uniform, perhaps not even the rule. . . . It is, perhaps, through the psyche that electricity acts in the majority of cases."

Electrical currents have some influence in allaying spasm and in promoting nutrition, and as a mechanical tonic. Their effects are, in the main, mechanical. The chemical and mechanical influence of the current in electrolysis, in stopping hemorrhage, in coagulating blood, and in destroying fœtal life, and the reflex effects, have also to be taken into account.

On the whole, while taking a cautious position as to the usefulness of this agent, a position of ultra-scepticism is decidedly unwise. Taken altogether, electricity is not applied as often as it might be with advantage by the general practitioner. It requires time and patience, and a little capital, for its proper use. Nine out of ten of the physicians who read this have no batteries, or those they have are out of order. The dishonest use of electro-therapeutics is something to which many may be tempted, but we cannot believe that such perversion of therapeutics is frequent. The number of persons who persuade patients and themselves that the triweekly use of a spray or caustic in the nose and throat, of iodine and glycerine tampons on the cervix uteri, of hypodermatic injections, of inhalation of medicated vapors, is necessary for recovery of health, must much exceed that of dishonest or incompetent electro-therapeutists, and the number of all classes is, we are sure, small.

THE MEDICAL FUTURE OF VOLAPÜK.

As we predicted some time ago, not a few enthusiastic students of Father Schleyer's new world-tongue are endeavoring to gain for it acceptance as the much-needed universal language of science. Several medical essays have been written in it with a view to prove its adaptability to such a purpose, and with a degree of success, its friends aver, amounting to a demonstration. We have not seen any of these essays, and cannot venture an opinion concerning them as evidence of the adaptability of Volapük to scientific uses; but we confess that we should wish to see a great many theses on a variety of subjects before being convinced that this language, in the shape in which it exists at present, can be used to describe with scientific accuracy the varied normal and pathological processes, and to fulfil all the requirements of precise medical phraseology.

One great objection is that the language is too young, that it has not attained a position of fixity, but is even yet changing. The forms of some of the letters have been changed, the pronunciation has been modified, and now it is proposed to alter the spelling, leaving out entirely certain letters which stand for vowel-sounds foreign to English ears. This is a fault common to almost all inventions, and experience is constantly pointing out defects and suggesting improvements. This is well, and, in the case of Volapük, it will doubtless result in the production of a more nearly perfect instrument for the expression of thought. But until this process is completed, the language will not commend itself to science. Besides, there is no guarantee that it will ever become fixed. It is true, there is an Academy of Volapük by which every proposed change must be approved before it can become a law, but

language laughs at authority and changes itself in spite of the will of man. This is true of the natural tongues, and is no less likely to be the case with one arbitrarily constructed.

Finally, we are not convinced that Volapük is the best of the artificial languages, although it is the one that has obtained the widest acceptance. Its inflections are simple enough, but it is a question whether it would not have been better to have had fewer of them. In this respect some of its rivals seem to be superior to it. One of these new languages, very simple in its construction and ingenious in its conception, is "Spelin," devised by Professor Bauer, of Agram. In this language the number of inflections of both verbs and substantives is reduced to a minimum, rivalling English in its poverty in this respect. It is possible that this will be found better adapted to the needs of international communication than Volapük, and then we should have two so-called world-languages. Let this process continue, and it will not be long before we shall have a dozen artificial tongues, and the object of their creation will thus be defeated.

Medicine is in need of a common tongue, but it is not likely that any artificial system will meet the want. We still have Latin, although, unfortunately, it is of little use to the present generation of physicians. But it could easily be made available for the coming generations, if only the thick-skulled instructors of youth could be persuaded to teach it in a more rational manner, so that it might be again a living tongue, and not a mere framework on which to hang a string of dry grammatical rules.

News of the Week.

Examinations for Vacancies in the Medical Corps of the Army.—An Army Medical Board has been ordered to convene in New York City on the coming 1st of May. There are at present seven vacancies in the Medical Corps, to which one more will be added in July by the retirement of a medical officer, making eight appointments which are to be recommended by this Board.

The Perennial Office Thief is here again in the person of a woman clad in a rusty black dress, with fur-lined satin dolman somewhat the worse for wear. If she is so unfortunate as to call when the doctor is at home, she generally makes an appointment with him to see a woman who is in the family way, or sends him off to a bogus address to visit a sick child.

The Samoan Islands, writes Dr. Vanderbeck in the *Medical and Surgical Reporter*, are the natural habitat of elephantiasis. It is endemic here. The inhabitants of Tutuila and the most eastward of the five islands constituting the group suffer most with it. Strange to say, it is uncommon in other groups quite near, as, for instance, in the Tongatabu, Society, Friendly, and Fiji Islands. I can find no satisfactory explanation for this fact. The natives say it is due to being in the sea-water so much; but Samoans are not exposed this way more than the other islanders. Some of the cases now in Leone are sights indeed. One tumor weighs seventy-six pounds, another forty-eight pounds, besides the frightful enlargement of the legs and arms. A woman has a labial tumor of this kind weighing fifty six pounds. Many of the cases are among aged people, who have been affected for very many years. The natives occasionally operate on each other, using either a razor or a prepared bamboo stick, which is said to cut equally well.

Dr. A. M. Phelps, of this city, was recently elected to the chair of surgery in the University of Vermont. The course in surgery commences May 15th.

Medical College Commencements.—The Louisville Medical College has graduated one hundred and three students; the Philadelphia Woman's Medical College, thirty-six.

Another Discoverer of a Cancer Bacillus has arisen in the person of Professor Platon I. Kübasoff, of Moscow, who reports the discovery of a pathogenic rod-shaped organism whose inoculated cultures cause cancer in lower animals.

Professor Virchow is at present much occupied in revising his great work on Cellular Pathology.

A New Medical College is said to have been organized at Asheville, N. C., with the hyper-geographical title of the "Western North Carolina Medical College."

The Medical Profession will be pleased and astonished over the news that the galvanic current is useful in facial paralysis. This important discovery has been announced as news, and editorially endorsed, by a daily paper of this city, which has lately been making some unique excursions into medical journalism.

The Treatment of Locomotor Ataxia by Suspension has been tried in this city for several weeks, at the clinic for nervous diseases of the Post-Graduate School, under the direction of Dr. C. L. Dana. The results, so far, we learn, have been only moderately encouraging.

Trephining the Pelvis for Psoas Abscess is a recent novelty in surgery, introduced by Dr. Michel Gangolphe (*Revue de Chirurgie*). He has operated upon two cases, one ending fatally and one in a cure.

The Hoagland Laboratory of Brooklyn has received a check for $10,000 from Dr. Daniel Ayres.

A Case of Stricture of the Œsophagus, cured by electrolysis, has been recently reported to the Académie de Médecine by M. Fort.

Bequests to Medical Charities.—In the will of the late Isaiah V. Williamson, of Philadelphia, who died March 7, 1889, leaving an estate valued at about ten millions of dollars, the following bequests were made: To the Pennsylvania Hospital $100,000; $50,000 each to the Episcopal Hospital, the University of Pennsylvania, and the University Hospital; $40,000 each to the Children's Hospital, the Women's Hospital, the Orthopedic Hospital, and the Woman's Medical College.

Bill for Adulteration of Food Defeated.—The House Judiciary General Committee of the Pennsylvania Legislature decided, on March 8th, to report negatively the bill advocated by the Society to Prevent Food Adulteration. The bill was aimed to prohibit harmful and deceptive, and regulate harmless and necessary, adulteration of food and drugs. It was thought that the present laws were sufficient.

ORGANIZATION OF A GERMAN DERMATOLOGICAL ASSOCIATION.—At a recent meeting, in which sixty-nine dermatologists from Germany, Austria, and other countries took part, it was resolved to found a German Dermatological Society, which should hold a congress every year in Whitsun-week. The following committee was appointed to make arrangements for holding the first congress this year at Prague: Professor F. J. Pick (Prague), President; Professor A. Neisser (Breslau), Secretary; Professor E. Lipp (Gratz), Treasurer; Professors J. Caspary (Königsberg), Doutrelepont (Bonn), Kaposi (Vienna), Lewin (Berlin), I. Neumann (Vienna).

A NEW HYPNOTIC, URALIUM.—Signor Gustavo Poppi, a medical student of Bologna, recently described to the Medico-Chirurgical Society of that city the effects of a new hypnotic, which he proposes to call "uralium." This substance is produced by the combination of chloral hydrate with urethan. From experiments on animals and on the human subject, Signor Poppi concludes that uralium induces sleep more quickly and more certainly than any other known hypnotic. He says that it causes no alteration of the blood-pressure, nor bad effects of any kind.—*British Medical Journal.*

RECEPTION TO PROFESSOR WILLIAM OSLER, M.D.—The Society of the Alumni of Bellevue Hospital gave a reception at the Cambridge Fifth Avenue and Thirty-third Street, to Professor William Osler, on Wednesday evening last, after the delivery of his lecture before that body. A large number o representative medical gentlemen were the guests of the evening, and the occasion will long be remembered by all who were present as one of the most enjoyable of the season. A magnificent supper, with the usual bibitory accessories, was furnished by Mr. Reich.

AN INTERNATIONAL CONGRESS OF THERAPEUTICS AND MATERIA MEDICA will be held in Paris, under the presidency of M. Moutard-Martin, August 1 to 5, 1889. The following subjects are announced for discussion: "The Analgesic Antithermic Remedies;" "The Antiseptics Suitable for the Destruction of each Species of Pathogenic Micro-organisms;" "Heart Tonics;" "New Drugs of Vegetable Origin recently Introduced into Therapeutics;" "The Unification of Weights and Measures Employed in Prescription Writing; The Utility of an International Pharmacopœia." Those desiring to read papers at the Congress are requested to notify the Secretary, Dr. Bardet, 119 *bis* Rue Notre-Dame-des-Champs, Paris, before May 15th.

BEEF-EATING CANCERS.—An editorial in the *New York Medical Journal* refers to the fact that, in certain parts of the West there is a belief that cancers have a fondness for beefsteak, and that raw beef applied directly upon the tumor is consumed. A correspondent of the *Journal* writes from New Brunswick, Canada; "I find the impression prevailing among a certain class in this neighborhood that the application of raw beef to a cancerous ulcer will restrain the ravages of the disease, and am aware of one case of scirrhus of the breast in a lady, a doctor's widow, in which it was used with alleged benefit. This was before my residence here, therefore I cannot give particulars of the case, further than that the cancer is stated to have 'eaten' *five pounds of steak daily.*"

Obituary.

JOHN SWINBURNE, M.D.,

ALBANY, N. Y.

THE death of Dr. John Swinburne, on March 28th, removes a unique and prominent figure in the medical and political circles of the State. Dr. Swinburne was a farmer's son, having been born at Denmark, Lewis County, N. Y., in 1821, where he spent the early years of his life, his boyhood days being devoted to helping his father till the soil and working in the country store. After a two years' course of study at Fairfield Academy he determined to become a physician, and in 1842 he went to the Albany Academy, where he applied himself earnestly to the study of medicine. Four years later he was graduated at the head of his class, and his knowledge of anatomy was so thorough that he was at once appointed demonstrator in the institution from which he had just been graduated. After four years spent in this way he opened an office in Albany and began to practise.

During the War of the Rebellion Dr. Swinburne served as a surgeon, and did much good work in extending the hospital service. Many a soldier has Dr. Swinburne to thank for saving an arm or a leg which otherwise would have been sacrificed to the amputating knife. Upon his return from the field, in 1864, Governor Seymour, in recognition of his valuable services, appointed him Health Officer of the port of New York, an office which he filled with ability and success for six years. At the expiration of that time he went abroad, and served during the Franco-German War, being in charge of the American Ambulance Corps at the siege of Paris. For this service he was decorated with the Cross of the Legion of Honor. In 1873 he returned to Albany and resumed practice, establishing a free dispensary.

Dr. Swinburne was elected Mayor of Albany in 1882. In 1884 he ran for Congress, and was elected by a large majority, but two years later he was defeated, after a hard-fought contest. The autopsy showed that Dr. Swinburne's death resulted from cancer of the stomach.

R. P. HOWARD, M.D.,

MONTREAL, CANADA.

DR. R. P. HOWARD, dean of McGill Medical Faculty at Montreal, died on March 28th, of pneumonia. Dr. Howard studied medicine in McGill University and in Great Britain and France. In 1849 he returned from Europe and commenced the general practice of medicine, and soon became the first physician in Montreal. In 1856 he was appointed Professor of Clinical Medicine in McGill University, and in 1860, upon the death of Dr. Holmes, succeeded to the Chair of Theory and Practice of Medicine in the same institution. About three years ago the degree of LL.D., *honoris causa*, was conferred upon him by the university in which he had been a professor for thirty-four years.

Dr. Howard was President of the Canada Medical Association, President of the College of Physicians and Surgeons of Quebec, President of the Medico-Chirurgical Society of Montreal, and Vice-President of the Association of American Physicians. In 1887, on the occasion of the centennial of the College of Physicians of Philadelphia, he was made Fellow of that body. For twenty-two years he was one of the attending physicians and surgeons of the Montreal General Hospital, and was the secretary of that institution for thirty-three years.

Dr. Howard contributed largely to medical literature. He wrote upon pneumonia, phthisis, heart disease, and anæmia, and his works upon these subjects made him a recognized authority in the profession. In 1885 he wrote a series of articles on rheumatism and allied subjects. As a teacher Dr. Howard was painstaking and industrious, and was considered a model lecturer.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, March 25, 1889.

ALEXANDER S. HUNTER, M.D., PRESIDENT, IN THE CHAIR.

DR. AUGUST SEIBERT read a paper entitled

THE ETIOLOGY OF FIBRINOUS PNEUMONIA.

Hardly any difference of opinion existed in former times regarding the etiology of pneumonia, as this disease was supposed to be the most conspicuous and evident example of inflammation brought about directly by exposure to cold. Only within the last twenty years, after the attention of medical men had been drawn to repeated observations of endemics and epidemics of pneumonia, and since the pathological changes during other processes could be traced to the division and growth of infectious material brought into the human body, and since the old ideas on inflammation and the formation of pus were modified by antisepsis, did prominent observers come forth with the theory that fibrinous pneumonia also was but an infectious disease. The discovery of that variety of pneumonia characterized by its tendency to wander from one part of the lung to another apparently started speculation on this question. Migratory pneumonia was first described by Weigand and Waldenberg, in 1870. The so-called one-day pneumonia, characterized by a critical fall of temperature twenty-four hours after the initial chill, while dulness, bronchial respiration, and rusty sputa could be observed a few days longer, was first described by Leube, in 1877, followed later by Weil and others. If all known symptoms but the elevation of temperature remained, then certainly this phenomenon did not coincide any more with the prevalent idea regarding active inflammation. Gradually statistical reports came forth concerning soldiers in the field and in barracks, Arctic expeditions, convents, boarding-schools, etc., which went to show that persons leading an out-of-door life, often exposed to bad weather, were in less danger of pneumonia than those who lived indoors. They also showed that the tendency to get pneumonia was in exact proportion to the time spent in close rooms. Mr. Budderbeck, druggist, and one of the survivors of the Greely expedition, told the author that in spite of extreme suffering from hunger and cold, not one of their number in all that time had a cough, not to speak of pneumonia.

Dr. Seibert cited numerous statistics of epidemics or endemics of pneumonia among persons confined more or less in the same rooms, which rooms were warm, moist, and filthy. It was but natural that these manifold reports, mostly dated within the last twenty years, should stimulate some to experiments, others to statistical comparisons. Heidenhain attempted to produce pneumonia by forcing cold air into the lungs of animals, and failed, and others failed after him. A number tried to find the peculiar weather-influence present in determining the frequency of pneumonia, and failed; but Poet, Leufft, Seitz, Baker, and Seibert were more successful, and their results coincided very much, though differing in explanation.

In his first report on an investigation regarding pneumonia and the weather, published in 1882, Dr. Seibert was able to prove that catarrh of the air-passages and pneumonia showed similar lines of frequency, meaning that when pneumonia was frequent catarrh was also frequent, and *vice versa*. This view had since come to be generally admitted. In a collective investigation regarding pneumonia and the weather, carried on by the Committee on Hygiene of the County Society, 1884–85, forty-four practitioners of New York and Brooklyn, and four hospitals, took part, and gave the following results: The origination of fibrinous pneumonia is greatly favored by certain meteorological conditions, thus explaining the difference in its frequency during the twelve months of the year. Low and falling temperature, high and rising humidity, and high winds were each capable alone of exercising this influence. If two of these weather conditions were found together, there were more cases of pneumonia than when one alone was present. If the three—cold, moisture, and high winds—were present, the frequency of pneumonia was great. Existing catarrh predisposed to fibrinous pneumonia.

In all his cases of endocarditis complicating pneumonia, Weichelbaum was able to cultivate Friedländer's pneumococcus from the pathological deposits on the endocardium. Emil Senger also found this organism in all fatal cases of pneumonia in the lungs, as well as in the complications (meningitis, pleurisy, endocarditis, nephritis, and pericarditis).

After carefully reading the article of Dr. Sternberg in the last two numbers of THE MEDICAL RECORD he was satisfied that Fränkel's coccus, described by Dr. Sternberg as "Micrococcus Pasteuri," would probably cause the more frequent form of pneumonia known as the sthenic variety, while the pneumococcus of Friedländer was the usual agent for producing the asthenic, bilious, or typhoid variety. But to his mind the most important investigations regarding the germ origin of pneumonia were those of Rudolph Emmerich. In the State prison at Amber, where an endemic of pneumonia had attacked 161, and killed 46, out of a total of 1,150 prisoners, Emmerich found Friedländer's coccus between the ceilings and below the floors of the sleeping apartments in great quantities, embedded in very moist *débris* which had been used to fill up the spaces. Mice infected by injections into the lung-tissue all died, and artificial pneumonia also occurred when they inhaled the microbe.

Secondary infiltrations in wandering pneumonia were to be explained, not by inflammation passing along by continuation of surface, but by the presence of an infectious material. Central pneumonia, and cases lasting but one or two days, also spoke for infection. Endemics and epidemics proved not alone that pneumonia was caused by specific poisons, but also that the germs were apt to thrive and grow in certain localities, at certain times, and under certain conditions, the important ones of which he had already mentioned. Whether or not pneumonia was contagious, so that the germ of the disease might pass directly from the patient to the attendant, as in measles and scarlatina, had not yet been settled. If at all contagious, it certainly was only to a very mild degree. Friedländer's pneumococcus appeared to thrive best in warm, moist, dirty rooms and houses. This statement was in accord with observed epidemics.

Pneumonia was found oftener in old and very young persons than in the middle-aged. Children under two years of age were attacked oftener than older ones. The explanation was that old people and children were less out of doors.

Pneumonia not only frequently attacked persons suffering from bronchial affections, it was also found complicating those diseases in which the pulmonary mucous membrane was usually in a state of congestion and hyperæmia, as typhoid, measles, and pertussis. On the other hand, pneumonia was not often seen complicating scarlatina, diphtheria, and meningitis. We were forced to conclude that the catarrh of the bronchi being absent in the one class of diseases, the opening in the mucous membrane necessary for the admission of the pneumococcus poison was wanting, which for its growth and multiplication was as essential as was a lesion of the skin for the origination of erysipelas.

DR. FRANCIS DELAFIELD opened the discussion. There seemed to be no department of disease concerning which our knowledge was still so uncertain as it was regarding causation. If we had made any advances in this direction it was due to the fact that we no longer accepted general statements concerning the causation of any disease, but looked more and more for exact data and exact work.

Until we got this we were becoming contented to acknowledge how little we knew of the real cause of disease. While this was true of many affections, it was particularly true of pneumonia. Although pneumonia had been known to physicians for many years, yet we could hardly say that any definite attempt at the solution of its causation had amounted to anything until within the last few years, and even yet the work done was so small in comparison with what was to be done that he thought no wise man would care to speak with any certainty as to its causation. We did not yet know, but the knowledge was on its way to us.

We knew in a general way that pneumonia seemed to belong to the class of infections inflammations; inflammations in which the inflammatory process was always accompanied with the production and the growth of a pathogenic bacteria. Such infectious inflammations required three factors for their development—a pathogenic bacterium, some exciting cause for the inflammation, and susceptibility.

A curious thing about such inflammations seemed to be that at different times and in different places, the one or the other of these three factors took the prominent part. Sometimes the bacteria took the prominent share, as the causative factor, in others the surroundings, and in others the susceptibility of the person.

In addition to this it must be admitted that the bacteriology of pneumonia was in its infancy. We were only just beginning to know about it. As far as we had advanced it seemed tolerably evident that more than one form of bacteria was capable of causing inflammation of the lung. We had descriptions of certain different forms of bacteria which had been observed in pneumonia, but as to general classification we were still altogether in doubt. Then it must have been noticed by all, that in pneumonia, as in some other infectious inflammations, there was a remarkable difference in patients suffering from the affection, as concerned the constitutional symptoms. Some patients behaved throughout as if they merely had a local inflammation of more or less severity, while others appeared like patients suffering from general infection in addition to their local disease. This was one of the most characteristic factors of the disease.

Dr. L. Emmet Holt had little to add. What was needed was more facts. There were plenty of theories. One thing which had impressed him more and more in this infectious disease was the difference in predisposition in different patients. This was most notable, perhaps, in children. This was also true of other affections, and was noticeable even in vaccination.

He thought fibrinous pneumonia was a rare complication of whooping-cough and measles in children. He had made many autopsies on children dying of pneumonia complicating whooping-cough, and he had yet to see fibrinous pneumonia at the dead-house. Diphtheria, on the other hand, was often complicated by broncho-pneumonia, though not by fibrinous pneumonia. He thought Dr. Seibert had stated too strongly that fibrinous pneumonia was very much more common during the first two years of life, while broncho-pneumonia was common in later childhood. Proportionally, the number of cases of fibrinous pneumonia was much larger, according to his observation, during the third, fourth, and fifth years.

In dispensary practice he had noticed great frequency of pneumonia among tenement-house children, those who never got fresh air, which went to show that it was a house disease. Abortive pneumonia was similar to what was seen in other diseases, as scarlatina, where the rash might last but half a day, and the temperature remain below 100° F.

Dr. Andrew F. Currier emphasized the statement made by Dr. Delafield, that there were other factors besides an infecting germ which should enter into our consideration of the cause of infectious diseases. This being true, the general practitioner, who had to rely upon the investigations of those engaged in special work for data on which to base an opinion as to causation, should not overlook the landmarks given them by careful observers of the past.

Dr. Messenger spoke of predisposing causes of pneumonia, and said he had found it more likely to occur in those of the rheumatic tendency. But, as Dr. Delafield had said, we did not know much about it after all.

Dr. Seibert, in closing the discussion, said he by no means considered all work necessary for a clear understanding regarding the etiology of pneumonia finished. Yet he thought that the facts and reports given in his paper were of great value, as they were undoubtedly correct. The frequency of fibrinous pneumonia in infancy could not be determined on the post-mortem table, as it was well known that this disease in the great majority of cases among children did not end fatally.

That acute rheumatism appeared to have some relation to pneumonia was undoubtedly true, as the speaker considered inflammatory rheumatism also to be an infectious trouble, also originating chiefly during winter and spring, and in its worst forms in moist, filthy apartments (basements).

The main point in the present status of our knowledge centred in the fact that we consider fibrinous pneumonia as an infectious disease, the germs of which thrive and multiply in the filth and dirt of dwellings. It is immaterial whether Friedländer's, Fränkel's, or Sternberg's coccus caused the disease, as long as we recognize the fact that when infection takes place it occurs in-doors, not in the open air. If, then, we accept this, then we can work on to accomplish in internal medicine what the surgeons have long since been doing in operative medicine: prevent infection by cleanliness and antisepsis, for the great future of internal medicine is in the prevention of disease.

Dr. Holt corrected an erroneous impression which Dr. Seibert had received from his remarks on fibrinous pneumonia at post-mortem examinations. He had seen but one case of fibrinous pneumonia at the dead-house. What he meant to say was, that pneumonia was frequent in measles, and the form shown to be present at the post-mortem table was broncho-pneumonia, not fibrinous pneumonia.

THE CASE OF BROWN VERSUS PURDY.

Dr. Daniel Lewis read the report of the committee which had in charge the appeal of this case. The reversal of the decision, giving the plaintiff Brown five hundred dollars, had been sustained by the Court of Appeals. The expenses had been only thirty-one per cent. of the sum subscribed by various members of the County Society. The remaining sixty-nine per cent. would be returned. Dr. Lewis said that in view of this decision it was not likely physicians would be troubled by such prosecutions in the future. A vote of thanks was extended the committee, and the substance of the report ordered spread on the minutes.

Soya Bread in Diabetes.—Dr. Lecerf has used bread made from Soya flour in a number of cases of diabetes and regards it as a valuable addition to the dietary in this disease, and as far superior to gluten bread (*Journal de Médecine de Paris*, December 9, 1888). *Soya hispida* is a leguminous plant growing in Japan and the far East, the grain of which is used by the natives in the preparation of sauces and to make a sort of vegetable cheese. It contains a large proportion of fat, which takes the place in great measure of the starch in other grains. The bread made from it resembles rye-bread, has an agreeable taste, and is quite digestible. It has a tendency to cause diarrhœa at first, but patients soon become accustomed to its use and can then take it without any inconvenience.

It is said that the people of India are able to perceive three hundred different shades of color not perceptible to European eyes.—*Medical Times.*

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, March 21, 1889.

ALFRED L. LOOMIS, M.D., PRESIDENT, IN THE CHAIR.

ON THE PLACE OF ELECTRICITY IN THERAPEUTICS.

DIFFERENT phases of this subject were discussed by several members. First, DR. M. ALLEN STARR read a paper entitled,

THE PHYSICS AND PHYSIOLOGICAL ACTIONS OF ELECTRICITY; FACTS VERSUS THEORY.

Electricity, he said, had been introduced into therapeutics over one hundred years ago, and since then had at different times met with varying degrees of favor. Twenty years ago its use in the treatment of nervous diseases was thoroughly established, yet recent books generally disregarded the advances which had been made in the physics of the agent and failed to reflect modern views of its usefulness. Dr. Starr thought the term "current" was partly responsible for the failure of physicians to correctly understand electricity and estimate its real value in therapeutics. The sooner it came to be realized that electricity, like heat and light, was merely a form of activity in matter, and the sooner the term electrical current gave place to the more accurate expression, state of electripcation, the sooner the mystery surrounding the agent would disappear. A new molecular state was produced by electricity, but nothing was added to or subtracted from the body itself. Between the two poles on the body this molecular state was more intense than elsewhere. The term "dosage" should not be employed, as it would be as misleading as the term "current."

Static or frictional electricity, voltaic electricity or galvanism, and induced electricity or faradism—all these forms were really the same mode of energy displayed under varying conditions. It seemed strange how much credence was still given static electricity in therapeutics, for its action was limited exclusively to the surface of the body charged; it did not penetrate the skin, could not permanently charge the body, and could produce a curative effect only as a surface-irritant or by reflex action, which effect could be obtained equally well by faradism, or by massage, lomi-lomi, whipping with twigs, etc.

A more permanent electrical condition could be obtained through galvanism, yet, when definite results from this form of electricity were spoken of, he thought there must be few physicians who would contend for a moment that there was any such certainty regarding therapeutic effects on the body as there was regarding drugs. Opium, for instance, would quiet pain; but was there any therapeutic effect equally definite from electricity? He thought not.

As far as the effects of galvanism were known they might be classed under three distinct heads: Catalytic, cataphoric, and electro-tonic. A strong current passing through the body produced catalytic, or disintegrating effects, raising blisters, at one pole containing an acid fluid, at the other an alkaline. In a few instances this effect could be made use of with advantage, as in the removal of hairs, but in the case of strictures good authority pronounced it a failure, and in the removal of tumors its effects, being less definite and less satisfactory, caused it to give place to other surgical procedures.

The use of mild, non-destructive currents had been advocated by some as an aid to nutrition. The only scientific observation which he had seen in this direction was that of Dr. Thatcher in a case of paresis of the upper extremities, where it was shown that under the use of galvanism one arm made almost double the progress of its fellow toward recovery. Under faradism no gain was perceptible, while under massage there was positive loss. It was undoubtedly the catalytic effect which was responsible for the nutritive change, and it was undoubtedly due to this action that benefit, if any were obtained at all, resulted from the use of galvanism in nervous diseases.

He had never seen a case of organic disease of the brain or spinal cord which he could consider cured by electricity. Such cases sometimes improved under treatment for a time, and then grew worse in spite of treatment, while others did not improve at all. In this respect his experience coincided essentially with that of Gowers. The only use of electricity in such diseases was found in its power to promote the nutrition and strength of paralysed muscles. It did not affect the pathological state in the cerebral organs.

Another question related to the amount of influence produced by electricity upon the deeper tissues, such as the brain and cord. The power in different tissues of conducting electricity was variable; to follow the charts in this respect was to be deceived. But a small fraction of the current reached the deep nerve-structures as compared with the amount applied to the surface. By applying the current to the surface of the body and making accurate electrical measurements in the brain when exposed by a surgical procedure, something definite, he thought, might be learned in this regard.

It was not improbable that favorable nutritive effects were induced by this agent through increasing circulation and causing more rapid chemical changes in certain paralyses, as lead palsy, yet he had not positive knowledge that the duration of lead palsy was shortened by the use of electricity. In neuralgias this therapeutic agent was of considerable value, but often disappointed expectations.

The power of electricity to promote osmosis was well proven. It had been used some of late to produce local anæsthesia and quiet pain, cocaine and aconitia being applied directly to the nerves. Medicated baths might be used on this plan, but they could not at present be commended, as the dose employed was wholly uncertain.

The faradic current was always electro-tonic, never catalytic or cataphoric, in its action. It was of great use in exciting the respective tissues to activity by producing changes in the electro-tonic state. The author closed with the following statements: 1. Static electricity offered nothing more than the interrupted galvanic current, and failed to furnish those effects which were most desirable in the treatment of disease. 2. The constant galvanic current could produce chemical changes which aided nutrition or destroyed tissue according to the strength employed. 3. The constant galvanic current could transfer medicines into the body from without. 4. The interrupted galvanic current or faradic current could excite various organs to functional activity. 5. It was questionable whether the pathological state causing organic diseases could be in any way influenced by electricity. 6. If functional diseases were benefited, it was in an uncertain manner, and the physiological indications for the agent were as yet uncertain. As a therapeutic agent its use was somewhat limited, and careful observation and analysis were required to establish its sphere.

After the constant use of electrical treatment for the past ten years, the author said he had been disappointed in the results obtained, and he could not ascribe this to any defect in application, as he used the best method with careful measurements.

DR. L. C. GRAY then read a paper entitled,

THE EFFECTS OF ELECTRICITY ON CENTRAL NERVOUS DISEASES.

First, however, he made some remarks on the paper of Dr. Starr, which, he said, contained some statements which had rather startled him. He would reply to the question, Could electricity be given as definitely for a definite purpose as opium? in the affirmative. There were certain affections which he would undertake to relieve with electricity with as much certainty as other affections with opium or quinine. Neither opium nor quinine was infallible, nor was electricity. He would undertake by electricity to relieve certain neuroses, and benefit as positively as any drug could do certain symptoms in cerebral disease, but not to cure the organic disease. He did not

know that anything more positive could be said of the effects of opium or quinine, or any other drug. But there was a great deal in the way electricity was used, and at the opening of his paper he briefly stated the latest approved manner of using it.

The reader based his deductions regarding the value of electricity in therapeutics on sixteen years' experience with it. For convenience he divided the diseases of the brain into the insanities and gross cerebral lesions. From the insanities he excluded in this connection the very chronic and incurable forms. But subacute mania, melancholia, the insanity of doubt, and functional insanities could all usually be benefited by electricity, but only in the period of convalescence, not in the acute stage.

Of the gross cerebral diseases it might be said that it was useless to administer electricity in brain tumors, meningitis of traumatic, epidemic, or aural origin, or in facial hemiatrophy. It was a useful adjuvant in intracranial syphilis in the early stage of headache and insomnia, and sometimes in the later stage following hemiplegia. Hemiplegia due to neoplasm and meningitis was omitted from treatable cases. If the molecular changes induced by chronic endarteritis of middle age, or of nephritis, or by emboli were such as not to lead to a fatal issue in case of hemiplegia, they could usually be favorably influenced by electricity when the primary symptoms of shock had thoroughly passed off. Meningitis of traumatic origin, if slight, might be benefited by electricity, and if hemiplegia of vascular origin were not followed by contracture it could also usually be thus benefited. Tic douloureux was uncertain in its response to electricity.

Dr. Gray said he had no faith in static electricity. The two currents which would answer every purpose of the physician were the galvanic and faradic. Speaking in a general way, the insanities required only electrical treatment directed to the intracranial contents, and this was best done with the galvanic current. Gross cerebral diseases produced two classes of symptoms: Those which were entirely cerebral, and those which were both cerebral and peripheral. In the former class galvanism addressed to the cranial contents would usually answer every purpose, while in the latter it might be better to address galvanism to the intracranial contents, and faradism to the affected peripheral structures. The method of applying the currents in the several cases was described.

He said the question as to which pole should be employed in the case of faradism, or as to whether an ascending or descending current should be used, had been a very puzzling one to him. He was perfectly well aware that there was a difference between the chemical effects of the negative and positive pole, that there was a physiological difference upon which had been based the prognostic use of electricity, and also that every patient could distinguish the positive from the negative pole by the sensation; yet, in spite of all these indubitable differences between the two poles, he had never been able to satisfy himself that there was a therapeutic difference between them. Reasoning from *a priori* considerations, the textbooks told us that the positive pole was sedative and the negative pole stimulant, yet he had over and over again unavailingly endeavored to obtain indications for the use of the positive or negative pole in a given disease. The only rule which he could lay down was this: Where one pole did not agree, try the other; and if that did not agree, stop using electricity.

THE EFFECTS OF ELECTRICITY IN SPINAL-CORD DISEASES.

Dr. W. R. Birdsall read a paper on this subject. He admitted as truthful the doleful picture of the therapeutic effects of electricity in spinal-cord diseases, which Dr. Starr had drawn, only in so far as it applied to other remedies as well. Too much should not be expected of this agent in a class of diseases which were incurable. Like Dr. Starr, he had never seen a case of organic disease of the spinal cord cured by electricity; but he went further, and stated that he had never seen such a case cured by any single therapeutic agent whatever. But for the relief of symptoms he had seen electricity serve a more useful purpose than any other. And, as a rule, in this class of affections we attempted only to follow symptomatic indications, as the relief of pain, anæsthesia, spasm, paralysis, trophic changes, symptoms which were the result of a variety of diseases of the spinal cord and its membranes. It might be laid down as a rule that in acute inflammatory affections of the cord electricity was not beneficial, and might prove injurious. Its use should be restricted to non-inflammatory affections. This led to the question, What were the effects produced by electricity? It was essentially a stimulant, an exciter of living tissues.

In therapeutic application we could not expect to find the distinctive effects of the cathode and anode as observed when electricity was applied to an isolated nerve. We did, however, know the effects of these agents on nerve-tissue, even more definitely, he thought, than we knew the effects of drugs. He believed a large part of the beneficial effects of electricity were indirect or reflex. The very fact that one could produce a strong muscular contraction, or sensory impression, by static electricity showed that it was an agent of decided force. In this connection the question of influencing the spinal cord or deeper structures naturally arose. He agreed with Dr. Starr that, by the ordinary method of applying the electrode to the back, a very feeble impulse was obtained in the cord, yet he believed that the cord could be excited in that way. All the tissues between the two electrodes which had a resistance not greater than that which the electro-motor force would overcome transmitted the current according to the ratios of their resistance. He believed, however, that the main benefit obtained from electricity in spinal-cord diseases was due to the peripheral impression.

The chief benefit which he had observed was in enabling the patient to recover more rapidly from partial paralysis than he would without electricity. Also in infantile paralysis improvement had taken place under galvanism in cases which had previously been at a stand-still. Paralysis from myelitis, also facial paralysis, and lead palsy had improved under electricity, chiefly galvanism.

Dr. A. D. Rockwell then read a paper on

THE EFFECTS OF ELECTRICITY IN PERIPHERAL NERVE-LESIONS.

The cases considered were those of functional troubles, among the more important of which was facial paralysis. He had seen many such cases hastened toward a cure by electrical treatment. In illustration of the form of current called for in given cases, he cited one in which the physician who first saw the patient, suffering from facial paralysis, applied faradic electricity without appreciable benefit. When brought to Dr. Rockwell, he made use of galvanism and the patient recovered. Here the intramuscular nerves were paralyzed in the beginning and failed to react to faradism, while the muscular fibres being still intact, they responded to galvanism. Faradism exerted its greatest influence upon the intramuscular nerves, and galvanism upon the muscular fibres. Dr. Rockwell had obtained much benefit from electricity in diphtheritic paralysis.

Dr. E. D. Fisher read a paper on

THE EFFECTS OF ELECTRICITY IN FUNCTIONAL NERVE-AFFECTIONS.

The reader alluded briefly to the theory of the action of the agent in these cases, but said he quite agreed with Erb, who had expressed the view that we might as well do away with the bromides and arsenic in functional nervous diseases because we did not understand the theory of their action as to abandon electricity because of our ignorance of the laws underlying its influence. Undoubtedly galvanism was more important as a remedial

agent in functional nervous diseases than was static or faradic electricity; yet, with regard to static electricity, he would say that in his opinion it should not be so positively discarded as it had been by Dr. Starr. Especially in neurasthenic cases did it have a stimulating and pleasing effect. It was in functional diseases, with error in nutrition, and not organic troubles, that static electricity found its field of usefulness.

ELECTRICITY IN THE TREATMENT OF UTERINE FIBROMA.

DR. PUTNAM-JACOBI discussed this subject from the statistical point of view. The statistics were very few, considering that Apostoli called attention to the treatment as long as four years ago. Many criticisms of the method had been made, mostly by English surgeons. Keith had been favorably impressed by it, and she had hoped to find definite statistics of his results, but he had only stated in a general way that he had made twelve hundred applications to over one hundred patients, the majority of whom were suffering from uterine fibroids; that they were commonly relieved. He also stated that a number who had come to have an operation performed received, instead, applications of electricity, and went home without an operation, the tumor being reduced in size. It was not unusual to see it stated by the few who had published their experience with this method of treatment that the patients were relieved of symptoms, and that the tumor was reduced somewhat in size, but many of the observations were imperfect, the treatment being applied but once or a few times, and the cases not followed up.

DR. GEORGE W. JACOBY thought the entire subject of electricity in therapeutics was one regarding which it was difficult to arrive at positive data; that those discussing it must take an empirical stand, either for or against, for the simple reason that one was dealing with physiological effects of which he knew but little. The one said the action was catalytic, the other that it was electro-tonic, and a third that it was reflex. In other words, they knew not what was occurring. The consequence was that electricity had been recommended for every disease and every symptom imaginable. As to Dr. Rockwell's cases, he thought he would find that those not treated by electricity would also terminate in the same favorable way.

DR. L. PUTZELL accepted the last remark of Dr. Jacoby as explaining much of the obscurity surrounding this subject. The physician was likely, in attributing good results to electricity, to overlook the natural history of the disease, which was toward recovery. He thought considerable could be done in the way of relieving symptoms, but that electricity would not cure an organic disease. In some cases the galvanic, in others the faradic, current would prove useful. For instance, the faradic current applied with a brush to painful points in neuralgia would often produce rapid and remarkable results. He believed Dr. Gray had said the trouble was that electricity was given empirically. Dr. Putzell thought that was the only way in which it could be given. He cited a case in which he accidentally found faradic electricity proving of benefit to varicose veins of the leg which had been intractable for twenty years. He then began applying it systematically, and within six months the varicosity practically disappeared.

DR. GIRDNER made some remarks on

THE ELECTRICAL STATE OF THE HUMAN BODY IN HEALTH AND DISEASE.

With one electrode in the mouth and the other in the rectum, variations in the electrical state were observed, the greatest variations taking place with fever. He thought the time would come when it would be considered as necessary to test the electrical condition as to take the temperature in disease.

DR. FREDERICK PETERSON said he had for several months been using a mixture of cocaine and aconitia in superficial neuralgias, causing the drug to enter the skin by the aid of electricity. By this means pain could be relieved in from five to eleven hours, but the method was not curative.

DR. WILLIAM H. THOMPSON remarked on the importance of distinguishing between the forms of electricity in therapeutic use. For instance, galvanism was a powerful chemical agent, while faradism had no chemical effect. He must agree with Dr. Starr that the action of the constant current was so uncertain that he could say little about it. On the other hand, the faradic current had one very definite effect, namely, that of stimulating the circulation in all the parts between the electrodes, and this was of special use in the restoration of muscles, whether the wasting were due to inflammation of their sheaths or to the withdrawal of nerve-influence. In lead palsy it was particularly of value in restoring the small muscles of the hand. The faradic current was also of value in the removal of exudations attending subacute inflammations, as in rheumatism of the joints, pleuritic effusions, congestive conditions of the liver and spleen.

DR. A. H. SMITH had obtained marked and immediate benefit from static electricity, as he could do from no other form, in soreness and stiffness of the wrist and other joints, due to exposure to cold.

Regarding Dr. Girdner's remarks, he thought the electrical variations observed were due to the accidental presence of some substance within the body. The same thing would be observed if the electrodes were brought in contact with a sponge which happened to have, for instance, a bullet within its meshes.

DR. STARR closed the discussion, and said he thought it had been rather unfavorable toward the many claims of electricity in therapeutics, and was against the view commonly expressed in text-books. Gowers deserved credit for being the first to show courage enough to say that electricity had not come up to the claims made for it. In physics there was a marked difference between the two poles, yet Dr. Gray had admitted that in therapeutics there was no known difference. The inference was that there was not much effect from electricity in therapeutics anyhow. With regard to his treatment of hemiplegia not followed by contracture by electricity, such cases got well anyway; if there were contracture, it would remain. That a weakened muscle might regain strength under electricity was undoubtedly true, for electricity exercised muscles. Dr. Rockwell had said that faradism acted on the intramuscular nerves, and these being paralyzed in peripheral lesions, faradism failed to produce contraction of the muscle, while galvanism, acting on the muscular fibres, did produce contraction. Dr. Starr claimed that such a statement of physics was absolutely erroneous. The reason why the faradic current did not produce reaction in the paralyzed muscle was that the interruptions were too rapid for the diseased muscle to respond. Make the connections slowly and contraction would follow. There was no difference between faradism and galvanism in this respect. There was only a difference in the method of applying the electricity, there being in the one case interruptions of the current, in the other, none. He took exception to Dr. Fisher's statement that a nerve was a good conductor of electricity. It had been proven to be a poor conductor. It was further true that the sympathetic system did not respond readily. He thought it was true faradism aided in causing absorption of exudates, but it was by stimulating the circulation, and this could be done as well by galvanism. He thought Dr. Smith's explanation of the phenomena observed by Dr. Girdner was correct.

NITRATE OF SILVER STAINING OF THE CONJUNCTIVA.—Dr. Grossmann had an opportunity of examining an eye which had been deeply stained with nitrate of silver. He found that the seat of the staining was not, as generally supposed, in the epithelium, but in the elastic fibres, the epithelium being almost free. The pigment grains were found to lie in a granular detritus formed by the breaking up of old elastic fibres.—*Medical Recorder.*

Correspondence.

ON THE USES OF ELECTRICITY IN MEDICINE.

To the Editor of The Medical Record.

Sir: In a communication which appeared in your columns to-day, Dr. R. W. Amidon makes the following statement regarding the recent discussion at the Academy of Medicine upon the uses of electricity: "Dr. Starr credited Gowers with being the first to express in print, in his very recent book on nervous diseases, ultra-conservative views on electro-therapeutics. As a firm believer in American common-sense, I protest against any such statement. That some of us eagerly swallowed the Continental bait ten or twelve years ago, I must admit, but that it has taken us twelve years to find out we were sold, I deny. Some of us at once set ourselves to personally and experimentally prove the correctness of the stupendous claims made by Continental electro-therapeutists, with the prompt result of finding most of them a lot of bubbles."

After citing his own views published in 1884, in a small volume of ninety pages, entitled "Student's Manual of Electricity," and said to have been delivered in lectures for three years prior to that time, he adds, "though not advanced by a European, it would seem as if these ideas were conservative enough, particularly as they were taught and published at a time when everybody else [!] was curing (?) with electricity locomotor ataxia," etc.

If I have done Dr. Amidon an injustice in omitting to refer to his little brochure, I regret my omission. But admirable in respect of clear and concise statement as that little book is, it does not appear to me to hold the prominent place in the estimation of the medical public which it perhaps deserves. I confess that it had escaped my recollection when preparing my paper. In it the statement is made that "under treatment will be discussed *only* therapeutic applications of electricity which the writer himself has found of undoubted utility in his practice." The work, then, is founded upon a limited experience. It appeared too soon after the larger works of Erb (1882), Dujardin-Beaumetz (1883), Althaus (1883), and others to contain any really critical experimental tests of their assertions, and therefore it had only the value of a controversial statement. And while I am glad to admit that Dr. Amidon's position has been to some extent borne out by the experience of others, yet I think that his statements carry more weight to-day than they did at a time when they were almost prophetic in character. A criticism of any method of treatment can only be fairly made after very long and very patient trial; and a criticism of such measures as are employed in electro-therapeutics must be reserved for years, since it is claimed that it requires years of such treatment to obtain results.

The conclusion reached at the Academy, by the majority of the gentlemen who took part in the discussion, that the field of electro-therapeutics is a narrow one, carries much more weight to-day than it did when reached by Dr. Amidon alone in 1881 or 1884. Yet I regret that I did not mention his opinion in the discussion.

While I do not think that I can be justly accused of an undue bias of opinion in favor of European as opposed to American work, I regret that in the advocacy of "American common-sense" Dr. Amidon should have selected electro-therapeutics; for it is, unfortunately, to American authorities that much that is erroneous in the claims of electro-therapeutics is to be traced. It seems to me that scientific observation should not be hampered by national prejudices, even those which are apparently patriotic.

Yours, very respectfully,

M. Allen Starr.

22 West Forty-eighth Street, New York,
March 30, 1889.

A Christian Science Teacher defines cancer as "an accumulation of discordant thought."

New Instruments.

AN IMPROVED NASAL INHALER.

By BEVERLEY ROBINSON, M.D.,

NEW YORK.

The object of the little instrument shown in the accompanying illustration is to facilitate the use of dry vapors in the nasal passages. Thus far I have never seen any cheap and practical apparatus for this purpose, the nearest approach to such a one being the inhaler figured in my work on "Nasal Catarrh." The great objection to that instrument is that it is not self-retaining, and also that it is too bulky and does not answer the purpose intended, since it does not vaporize volatile drugs sufficiently. The instrument here shown is simply a hollow cylinder of hard rubber, an inch and a half long, and three-quarters of an inch in diameter, surmounted by a nozzle with convex outline, by means of which it is made self-retaining in the nares. Near its inferior margin are a number of small perforations, and within the cylinder is a bit of fine sponge retained in position by a transverse pin. Any volatile liquid substance, such as creasote, eucalyptol, pine-needle oil, etc., may be used with this inhaler. Another advantage which the instrument possesses is its small size (the cut represents the actual size of the inhaler), by reason of which it can be carried in the pocket, and used at any time during the day as may be required.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 24 to March 30, 1889.

An Army Medical Board will be in session in New York City, from May 1 to 31, 1889, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the board will make application for the necessary invitation to the Secretary of War, before May 1, 1889, stating the place of birth, place and State of permanent residence, and enclosing certificates based on personal knowledge from at least two persons of repute, as to American citizenship, character, and moral habits. Testimonials as to professional standing, from professors of the medical college from which the applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.—John Moore, Surgeon-General, U. S. Army, Surgeon-General's Office, Washington, D. C., April 1, 1889.

Barnett, Richards, Assistant Surgeon. Died March 27, 1889, at Fort Riley, Kan.

ALEXANDER, R. H., Lieutenant-Colonel and Surgeon. C. O., at Los Angeles, Cal., reports his death on March 29, 1889, at 11:50 A.M.

MAUS, LOUIS M., Captain and Assistant Surgeon, Fort Schuyler, N. Y. H., will proceed to Camp S. B. Luce, Fisher's Island, N. Y., with battery "K," 5th U. S. Art., and report to the Camp Commander for a tour of rifle practice. Par. 10, S. O. 158, Headquarters Division of the Atlantic, Governor's Island, New York City, March 21, 1889.

Atlanta Barracks, Ga. Established by G. O. 28, A. G. O., March 21, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending March 30, 1889.

BERRYHILL, THOMAS A., Assistant Surgeon. Detached from Naval Academy, Annapolis, Md., and to the Naval Hospital, New York.

HEFFENGER, A. C., Passed Assistant Surgeon. Ordered to appear before the Retiring Board, Washington, D. C.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending March 30, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	5	4
Scarlet fever	480	58
Cerebro-spinal meningitis	4	2
Measles	158	13
Diphtheria	172	47
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

COLDS AND CLOTHING.—The teaching of modern science and of ancient custom goes to show that heat production within the body has much to do with the tissue changes concerned in muscular activity and with healthy digestion. It is conserved by warm and moderate, wasted in evaporation by excessive, clothing. Finally, by a simple nervous reaction, it is increased after the contact of external cold. It follows from these observations that if we be so clad with comfortable underclothing that surface perspiration is not formed in excess and is rapidly removed; one great cause of chill—sudden evaporation—is done away with. Outer cold, then, provided it is not too severe, only touches, as it were, the spring of the heat-making metabolism, and, exciting an elastic rebound in the chain of vaso-motor fibres, awakens that oxidative action by which every tissue is made to yield its share of heat to the body. This bracing influence is lost wholly or partly to those who are too heavily clothed, and in its place we may have a dangerous excess of surface heat. It is for this reason that we have before protested, as we now do, against the indiscriminate use of the thick and heavy overcoat. We would rather see men in fairly robust condition, especially if young, clad warmly next the skin, and wearing either a light top-coat or none at all. There can be no doubt that the habitual use of great-coats is indirectly accountable for the chills which they are intended to prevent. Were the overcoat worn continuously it might attain its object. Its intermittent use, even when ample underclothing is worn, affords no solid guarantee of safety, but rather the reverse. The man of sedentary habits has especial need to remember this. He emerges daily from a warm breakfast-room clothed in his ordinary winter garments, with probably woollen underwear, and over all the heavy ulster or top-coat. After a short walk he finds that the sense of warmth he began with is more than maintained. He arrives at his office or place of business, and off goes the overcoat though the air of the newly opened room is as cold as that without, and draughty in addition. During the day perhaps he travels to and from adjacent business houses wearing only his house clothing. The overcoat is laid aside till closing time reminds him of the journey home. The frequent result is that somehow between the hours of his departure and return he is chilled. No doubt he would run as great a risk if, lightly clad, he were to face the rigor of a winter day. In this case, however, exercise and habit might do much to develop the power of endurance, and there would, at all events, be less danger of sudden cold acting upon a freely perspiring surface. Woollen underclothing represents a state of healthy comfort intermediate between these extremes, and more resistant to chill than either. In commending its use, however, we do not assert that the influence of age and constitution is to be overlooked. Youth can oppose a power of resistance to depressing agencies which does not reside in the worn-out nerve-centres of a riper age. Similarly, that elastic reaction which characterizes the nervous and sanguine types is not to be looked for in the lax tissues of the lymphatic. The weaker physique naturally calls for fuller protection than the stronger; and any rule requiring the disuse of the overcoat should allow of reasonable exceptions in favor of the old and constitutionally feeble. Unusual severity of weather, especially if associated with night-air and the loss of sleep which this implies, is another condition which might well constitute an exception. In such a case we are compelled to add some form of overcoat to the ordinary amount of clothing. Some parts of the body—for example, the chest, throat, and feet—are certainly more susceptible to cold than others. As a useful safeguard, cold or tepid bathing of such parts is in merited favor. The custom so common with many persons, especially women, of walking out in thin-soled boots often plays an important part in catching cold. The progress of time and of rational thought may be expected to bring in a more comfortable arrangement by clothing the foot in woollen hosiery and a stouter boot.—*The Lancet.*

THE PARALDEHYDE HABIT.—A case of this kind is described as occurring in the person of a maiden lady of forty-two years of age who, through the assistance of her physician, was conducted from the use of morphine and chloral into that of paraldehyde, and he could get her no further. All attempts at abandoning the pernicious habit have been futile. The lady now consumes one ounce or more of the drug daily, and has taken as much as twenty ounces in twelve days. She cannot sleep unless under its influence, and when deprived of its use for a few hours she is languid, restless, miserable, suffering physical pain and mental depression, and she has no appetite. Unlike morphine deprivation she has no exhausting diarrhœa, muscular tremors, or "electric pains," when without the paraldehyde, but, like all remedies which exercise marked psycho-neural restraint after long-continued use, the patient misses, in a marked and painful manner, the sudden withdrawal of the long-accustomed nerve-impression. She has somewhat prematurely reached her menopause, and some of her irritability and debility may be due to that; but she is irritable, exhausted, and collapsed when the drug is not freely circulating in her blood.—*The Alienist and Neurologist.*

ACCIDENTS DUE TO INTRA-UTERINE INJECTIONS.—These are divided by Dr. Mangin, *Nouvelles Arch. d'Obs. et de Gyn.*, into accidents of three orders: 1. Accidents of retention. 2. Septic accidents. 3. Nervous accidents. He explains the first order by the slow absorption of the fluid injected and retained in the uterine and vaginal cavity; by the penetration of the liquid into the peritoneum by way of the Fallopian tubes; by the penetra-

tion into the circulation by the venous sinuses of the liquid injected. This variety he considers the most frequent and the most serious. Septic accidents, shiverings followed by fever, appearing always after a uterine irrigation and ceasing only after the injections are discontinued, are manifestly in correlation with these injections. The nervous accidents, which are always incriminated as soon as a complication after an injection arises, should be looked upon as exceptional. After fully describing the mechanism of the three orders of accident the author states that the nervous accidents are without gravity. This is far from true of the toxic and febrile accidents, which ought and can be avoided by certain precautions, as the securing of a catheter by which the return of the liquid is made certain, and to be careful not to raise the vessel containing the liquid more than thirty centimetres above the bed.—*The American Lancet.*

THE SURGICAL TREATMENT OF PURULENT PERICARDITIS.—The successful case related by Dr. Dickinson at a meeting of the London Clinical Society will again direct attention to the treatment of purulent pericarditis by free incision and drainage. Dr. Dickinson's is now the third published case treated by incision and drainage that has recovered. Notes of the two former cases were given in a paper read before the Royal Medical and Chirurgical Society, in 1883, by Dr. S. West, and published in vol. xlvi. of that Society's "Transactions." The first case was one of Professor Rosenstein, the patient being a boy aged ten; the second case was that of a boy aged sixteen, treated by Dr. S. West; and now this third case (Dr. Dickinson's) was also a boy, whose age was ten. Many fatal cases have besides been recorded, so that the operation may not be lightly undertaken. Purulent pericarditis however, is usually so fatal a disease that severe measures may be justifiably employed for its treatment; and, although the physical signs which accompany it do not always enable the physician to diagnose with certainty between it and serous pericarditis, it is always possible to undertake a puncture for diagnostic purposes. With regard to this especial point of the diagnosis, it is to be noted that in purulent pericarditis a friction-sound is usually absent; but, the diagnosis having been settled by the exploratory puncture, and treatment by incision and drainage determined upon, the place of puncture must be settled. It is usually recommended to make the incision in the fourth or fifth intercostal space; but in Dr. Dickinson's case the fifth right space was chosen by Mr. Rouse, the operator. Mr. Godlee, at the meeting, exhibited some drawings showing the relation of the internal mammary arteries to the edge of the sternum in children, from which it appeared that if the operation is done very close to the sternum the vessel of the side selected is very apt to be wounded; and he recommended that the vessel should be cut down upon and tied before the pericardium is opened. Dieulafoy recommends the fifth left space, about one inch from the edge of the sternum, as the best site for puncture with the aspirator. The purulent pericardial sac being opened, and the fluid drawn off, the relief to the patient is usually at once extreme; the pus should then be allowed to drain away through a tube until recovery ensues. The drainage was facilitated in Dr. Dickinson's case by the patient being placed face downward in bed. The elasticity of the pericardium further tends to empty its cavity. Altogether, it is allowable to hope that a fair chance of success will attend this operation in the future when it is undertaken with full antiseptic precautions.—*The British Medical Journal.*

CASE OF ASCITES SIMULATING OVARIAN TUMOR.—At the Medical Society of London (*The British Medical Journal*, November 17, 1888), Dr. Gulliver read the notes of a case of ascites simulating ovarian tumor, in a patient aged sixty-three. She was admitted on August 24th, and died on October 4th. Her symptoms previous to admission were pain in the back and inability to retain her urine. There was, however, nothing to indicate renal disease. One month before admission the legs and abdomen began to swell, and she was subject to attacks of vomiting. When admitted she was very emaciated. The thorax was normal, but the abdomen was prominent. The whole front of the abdomen was dull on percussion, the dulness being more marked on the right side, which was bulged. The dulness extended from the ensiform cartilage to the pubes. There was a zone of resonance over the left flank. At this time the diagnosis was in favor of an ovarian tumor. On the right side the thrill of fluid was obtainable. On September 8th, ten days after admission, she was tapped, and seven or eight pints of fluid was drawn off; the fluid resembled ascitic fluid, presenting none of the characteristics of ovarian fluid. Immediately after the withdrawal of the fluid the dulness became more unilateral, disappearing from above and to the left side. The dulness, however, remained over the lower two-thirds of the abdomen on the right side, and later on resumed its original extent. There was vomiting, but no signs of obstruction of the bowels. Albumin was now found in the urine, and this, together with the age of the patient, precluded the idea of operative interference. The diagnosis at that time lay between ovarian tumor and ascites shut off by vertical adhesions. She died on October 4th. On opening the abdomen a considerable quantity of ordinary ascitic fluid escaped. The whole interior of the abdomen was lined by a smooth, thickened membrane, extending from the under-surface of the diaphragm down to the pubes. On the right side it formed a continuous sheet across the front of the abdomen, with a free border on the left side; it covered in most of the abdominal viscera. On the left side were coils of small intestine fixed down by adhesions. The organs themselves were apparently healthy. Many of the appearances simulated horizontal localized ascites.

A WARNING AGAINST THE USE OF COCAINE IN HAY-FEVER.—Dr. Windle records in the *Birmingham Medical Review* his personal experiences with cocaine in the effort to obtain relief from hay-fever. He says: "During the first fortnight or three weeks of the administration of cocaine, I can scarcely describe the delightful effects which it produces. It removes within a minute or two after its absorption all sensation of fatigue, bodily and mental, and produces a most pleasurable capacity for work apparently. I say apparently, because I doubt if it would be possible to do anything which required great concentration of mind while under its influence. As a matter of fact, I have found it very hard to do original work under these conditions. During this time, too, there is very little reaction after the use of the drug. But after a short time conditions change, the drug begins to act less powerfully, requiring a stronger solution and more frequent application, and coupled with this there is experienced a great reaction. It is difficult again to give an idea of the amount of this. I can only say that during the period alluded to, especially if one has necessarily a good deal of work to do, the prostration, I can use no other word, which follows upon the use of the drug is most severe. This, however, is not all, for the appetite is decreased and sleeplessness induced. The action of the heart becomes rapid and unsatisfactory, and the whole nervous system is brought into a highly strung, overwrought condition. I can assure those who hear me that I have not overdrawn this side of the picture. So strongly is it impressed upon me that, in spite of the great annoyance and even suffering produced by hay-fever, and the relief afforded by cocaine, I am very doubtful whether I shall venture to run the risk of using it during another season."

In conclusion, he says that the lesson which he has learnt is that while cocaine as a remedy affords a palliation, perfect for all practical purposes, it is a drug whose use is accompanied by so many collateral disadvantages as to make it very doubtful as to whether its continued exhibition, during five or six weeks, is a line of treatment which it is safe or justifiable to enter upon.

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Original Lectures.

ON PHAGOCYTES.[1]

BY WILLIAM OSLER, M.D.,

PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

THERE are in the body groups of tissues possessing cells which either normally display amœboid changes or are capable, under certain conditions, of assuming them. By amœboid properties we mean not only the capability of free movement, but the possession of a power which enables a cell to take foreign particles into its interior. Tissues containing such cells are derived from the mesoderm, the type of which, phylogenetically, is a free wandering cell (Minot). In the development of this layer epithelial and non-epithelial portions may be distinguished. For the former Minot has suggested the term mesothelium, and the latter His calls mesenchym. The distinction between the two is, however, largely artificial, as the epithelium may be, and in places is, in development changed into connective tissue. And, thirdly, there are in the mesoderm, at all stages of its development, certain cells which are free and independent—mesamœboids (Minot)—and which persist subsequently as leucocytes.

These mesodermic cells in the adult body, which are capable either of free amœboid movements or of taking into their protoplasm solid particles of various sorts, are met with:

(1) As the colorless corpuscles of blood and mucus.

(2) The connective-tissue cells, free and fixed, within the connective tissue proper, or forming the supporting framework of the solid organs.

(3) Cells of the spleen, bone, marrow, and lymph-glands.

(4) The vascular and lymphatic endothelium.

(5) The alveolar epithelium of the lungs.

All of these cells possess, in a greater or less degree, the power of taking solid particles into their interior—virtually, as we say, of eating them.

On account of the possession of this property, Metschnikoff has suggested for these groups of cells the term *phagocytes*, as expressive of their most distinctive feature, and for the process in general the term phagocytosis.

He regards this function as a property handed down from the primitive unicellular organism, and traces in an interesting manner the evolution of cells possessing it throughout the animal kingdom; attempting to show a genetic relation, physiologically at least, between the free living rhizopods and the cells of the middle germinal layer of the higher animals. Not a little of the attractiveness of Metschnikoff's views is derived from the glamour of evolution thrown over them, by thus attributing the retention in certain cells of an atavic property in the highest degree useful to the organism.

I shall consider first the action of these phagocytes as normal physiological factors in the work of the body; and, secondly, take up the theory that these bodies play an essential *rôle* in the protection of the organism from the invasion of specific germs.

And, first, two illustrations from comparative physiology to indicate the important part assigned to phagocytes in certain transformations which animals undergo. In the development of the frog, the removal of the tail of the tadpole, and of the gills, by gradual atrophy, is effected, according to Metschnikoff, by the activity of the amœboid cells. At a time when the hind-legs begin to bud, the leucocytes migrate into the tail, and by their phagocytic action remove the tissue, fragments of which, as muscle, bits of nerve-fibres, etc., may be seen in the interior of their protoplasm. The gills are absorbed by an identical process. In the transformation of the larva into the fly, Kowalewsky[1] has shown that the large masses of muscle-tissues, so abundant in the larva, and other parts unnecessary in the matured condition, are removed by the activity of the phagocytes.

It has long been known that foreign bodies, such as ligatures, portions of dead bone, and other substances, may be completely removed by leucocytes. Interesting as is this, and bearing directly upon the question, I propose to limit myself entirely to the consideration of the two aspects above referred to.

Nowhere in the body do we have such a facility for studying the action of phagocytes as in the organs of respiration, in which, with the cilia of the bronchial mucosa, they share in the work of cleansing the air-passages; and of these two important agencies it is hard to say which plays the more important part in the expulsion of those particles of foreign matter which, in cities at least, we constantly inhale. There are several groups of cells engaged in this work: The ordinary mucous corpuscles; the alveolar epithelium; the connective-tissue elements of the pulmonary stroma, and the leucocytes of the lymph-tissue in the bronchial, tracheal, and mediastinal glands.

The mucous corpuscles, which in health are derived largely from the muciparous glands, and in inflammatory states from the general bronchial mucosa, are actively concerned in attacking the dust which reaches, in ordinary inspiration, as far at least as the medium-sized tubes.

The examination of the morning sputa of a cigarette-smoker, or of a person who has been exposed to a dusty atmosphere, shows very clearly that no small proportion of the carbon grains is included within protoplasm. The free granules are abundant, but almost every leucocyte has its little load which it has picked up on its road from the finer tubes to the trachea. I have always thought this represented a neat bit of economy of labor, as there can be no question that it is easier for the cilia to sweep half a dozen angular particles, when enclosed in a cell, than to work at the same when free. In all probability, the finer particles which fall upon the tracheal or the bronchial membranes are gotten rid of almost entirely by cells and cilia. There does not appear to be, to any great extent, penetration of pigment-granules between the ciliated epithelium. It is unusual to see beneath the tracheal mucosa any collection of carbon grains. We do meet with it in the submucous bronchial tissue, but the active vibratile lining seems to afford a tolerably sure protection. The lymph-vessels open on the surface in the pseudo-stomata, and in the experimental work of Arnold[2] and others, leucocytes carrying black grains have been seen in the submucous lymph-vessels; yet the process does not seem to go on to any great degree.

The particles which reach the air-cells find no active current to sweep them from the spots on which they fall.

[1] An Address delivered before the Alumni Association of Bellevue Hospital, New York, April 3, 1889.

[1] Zeitschrift für wissenschaftiche Zoölogie, Bd. xlv.

[2] Untersuchungen über Staubinhalation und Staubmetastase. Leipzig, 1885.

It is possible to conceive, under certain conditions, of the air-cells gradually filling, were it not for the activity of phagocytes, derived largely from the alveolar epithelium, which stands, as it were, at the gateway of the lymphatic circulation.

The cells lining the air-cells, seen, for instance, by scraping gently the cut surface of an œdematous lung, look as flattened, desiccated, and lifeless as do the scales of the scarf-skin. But appearances are deceptive in this case, and the protoplasm of these cells is not only active, but probably varies much in shape with the distention or contraction of the alveoli. When in contact with liquids and in pathological conditions, they change so much in form that I find it often a difficult lesson to teach students familiar with normal histology only to recognize, in the large, swollen ovoid cells so common in sputa, alveolar epithelium. Moreover, from the rapid way in which they may be desquamated, there must be ample provision for their rapid restitution. How far, in a normal state, these cells take part in the work of cleansing the lungs is not yet definitely settled. In the young they do not often appear in the sputa, except when there are indications of catarrhal changes, but in the adult their presence is very common. It is rare to see one in the sputa of a hospital patient which has not brought with it a load of carbon, all of which may not have been derived from the air-cells, as these bodies can undergo amœboid changes, and, like the leucocytes, are probably not above picking up a grain or two in their course toward the larynx. In cases of bronchial catarrh, and in phthisis, these pigmented cells of the alveoli may be very abundant, producing the blackish streaks which may be seen with the naked eye. When these cells have undergone the myelin degeneration they seem no longer capable of performing scavenger work.

In coal miners, or even in stokers and coal heavers, these pigment-laden cells may be extraordinarily abundant. It is not only when the patient comes direct from the mines, or from the coal yards, but the old *poitrinaires* who haunt in such numbers our city hospitals, expectorate for months, or even longer, sputa containing the pigment-laden alveolar cells, staining the entire expectoration. So persistent may this be that the process may be regarded, not simply as an extrusion of the daily dole of carbon, but as a definite excretion, if we may so use the term, of particles which have been stored up in pulmonary parenchyma.

A certain proportion of the inhaled dust-particles escapes the mucus-cells and the alveolar epithelium, and penetrates the substance of the lung, entering at the *kitt-substanz* between the cells, or through the pseudo-stomata existing in the alveolar wall. The particles of coal dust have such sharp angles that we may suppose them capable of mechanically lacerating the delicate alveolar cells.

In dwellers in the country, as well as in wild animals, breathing an air comparatively pure, the cilia and the phagocytes in the air-passages appear quite able to prevent access of the carbon grains to the lung-tissue; whereas in the dwellers in the cities, and in animals kept in confinement, the impurities in the air are so abundant that these agents are insufficient, and sooner or later the grains penetrate the air-cells, aided no doubt by the movements of inspiration and expiration; and we have the well-known marbled or carbonized organs which we see every day upon the post-mortem table.

When the particles reach the lymph-spaces, the fixed and free connective-tissue cells of the stroma join actively in the work. On section we see in the alveolar septa large numbers of round protoplasmic bodies, two or three times the size of colorless blood-corpuscles, which are usually packed full of dark grains. A certain proportion is seen within the ordinary connective-tissue corpuscles, and in addition there are, in variable numbers, ordinary leucocytes. But even these forces are insufficient to meet the constantly advancing stream of dust-particles. The destiny of those which escape the phagocytes in the alveolar stroma has been accurately followed in the investigations of Arnold and others.[1] Entering the lymph-stream they are carried first into the lymph-nodules which, in the lungs, surround the bronchi and blood-vessels, and a large number become fixed in the cells of the follicular cords or are permanently embedded in the stroma.

As they pass along the lymph-channels into the interlobular septa beneath the pleura, a still further number lodge and become permanently enclosed in the stroma-cells, and, finally, the remnant pass into the larger lymph-channels and ultimately lodge in the bronchial and tracheal glands. Here the lymph- and stroma-cells of the follicular cords dispose of them permanently. That this is effected in great part by the phagocytes is, I think, unquestioned. A scraping from any moderately pigmented lymph-gland shows that the chief part of its carbon load is warehoused (so to speak) in protoplasm; the granules lie for the most part embedded free in a connective-tissue matrix. Here the struggle is practically over, and though not a victory, yet the compromise which has been made is the best which could possibly be effected. The sharp irritating particles have been placed in a position in which they could do the least harm, and, though not expelled, have been safely imprisoned.

Once in the lymph-glands of the bronchi, it is thought they never reach the general circulation, but it has been shown of late years that under certain circumstances the carbon particles may pass the bronchial filters and spread far and wide throughout the system. Soyka's remarkable case, in which undoubted coal particles were found in the tissue of the spleen and of the liver, illustrates what really may occur. Weigert[2] in particular has called attention to the frequency with which, in the spleen and in the liver, carbonization of the connective tissue occurs. He states that it results whenever densely pigmented bronchial glands form close adhesion to the pulmonary veins, through the walls of which the carbon particles pass and so reach the general circulation. I would not call the condition common, but I have seen at least three instances at the Philadelphia Hospital in which the ir regularly distributed pigment in the spleen and in the liver (in the latter chiefly along the portal canals) was undoubtedly of extraneous, not of hæmic origin.

The steps in this process described may be followed in the lungs of any town-dweller, but to see in perfection the remarkable activity of the pulmonary phagocytes, one must study the early stages of anthracosis, particularly in those exceptional cases which we see occasionally when a miner has been killed by accident or dies of acute disease. It is not, I think, too much to say that the larger part of the pigment contained in lungs almost, if not quite, black, is enclosed in protoplasmic cells. Here too the invading particles are more formidable and not so readily dealt with; yet one frequently finds long irregular bits completely encircled by a film of protoplasm which the phagocyte has stretched to the utmost, just as we may see an amœba extend along the whole length of one of the short rod-like diatoms.

I know of nothing which illustrates better the remarkable amœboid properties of human protoplasm than a slide prepared from the scraping of such a lung, or of the black juice pressed therefrom. Scarcely a leucocyte can be seen which has not been at work, and many of the larger cells have the protoplasm stuffed to the full with carbon grains. Only in the work of the pond amœbæ, preying among desmids, diatoms, and algæ, can we see such better illustrations of active work. There is, of course, this difference, that the amœba eats to live, and so far as I know, never loads its protoplasm with useless stuff. The body phagocytes take anything, never exercising selective powers. The particles which gain entrance to the lungs may be far too large for a single phagocyte to attack successfully. I have sketches showing rod-like

[1] See recent work of Fleiner, Virchow's Archiv, Bd. cxii.
[2] Fortschritte der Medicin, Bd. i.

particles, the ends of which appear enclosed in protoplasm of a dumb-bell shape; while in one instance not only were the ends enclosed, but the central portion was completely enveloped by the third leucocyte.

A physiological process in which phagocytes play a leading *rôle* is the removal and disintegration of the red blood-corpuscles which have lived their life and are no longer fit for work. The cells containing the red blood-corpuscles which are found in the bone-marrow and in the spleen, however much opinion may differ as to their mode of origin, cannot, I think, be regarded in any other light than as phagocytic elements with this definite function. They exist normally in the red marrow and in the spleen, and we may recognize (1) cells which appear to be, from their size and shape, elements of the pulp, and (2) cells which belong to, or are derived from, the endothelium of the capillaries, and (3) the cells of the stroma. The gradual production of the pigment in this way has been so often described, and is so well known, that I need not now dwell upon it. In certain morbid conditions we see this process widely extended, and we find cells containing red blood-corpuscles in the liver, in the lymph-glands, even in the blood itself; and particularly is this the case in those states associated with rapid blood deterioration and destruction, as in acute fevers, when these bodies may be enormously increased. In certain forms of anæmia so abundant are they in the bone-marrow and in the spleen that they have been regarded as directly concerned in the wide-spread hæmopthisis.

The observations of Quincke [1] and his pupils have shown that the liver is the chief seat of blood-destruction in pernicious anæmia, but the totally different appearance presented by this organ, even in long-standing cases, to that met with in malaria, shows a radical difference in the nature, possibly in the seat of the hæmolytic action. In the former case the pigment is chiefly in the liver-cells; in the latter, in the stroma and about the blood-vessels. We cannot from this regard pernicious anæmia as an hepatic disorder. The liver, probably, makes the best disposal it can of an abnormally large amount of coloring matter, which is, I should suppose, not brought to it in the same form as in malaria, but rather in a form similar to the raw material of the bile-pigment, which would account for the active participation of the liver-cells. The deep beefy-red color of the muscles in pernicious anæmia also tells of an abnormally large quantity of coloring matter at the disposal of the tissues.

In chronic emphysema, in mitral obstruction, and in all affections in which the circulation within the lungs is permanently embarrassed, the condition of brown induration which ensues affords a very beautiful illustration of the same process. The blood-corpuscles by diapedesis reach the stroma of the air-cells, where they are seized upon, just as are coal particles, by the connective-tissue cells and are gradually converted into a pigment which retains for a long time its brownish tint, but which may ultimately become black.

Neumann, in a recent paper,[2] doubts whether the brown induration of the lungs is really the result of the ingestion of the red blood-corpuscles by the stroma-cells. He holds that in many instances, at least, structures within the corpuscles, which resemble so closely the red blood-disks, are in reality only pigment-forms having the size and color of the red blood-cells. We certainly see structures within the cells which cannot possibly be mistaken for anything but red blood-corpuscles, and I think the expert eye can usually discriminate between such and the round aggregations of pigment, however deceptive may be their form and color.

Phagocytosis has been studied in the process associated with absorption of extravasated blood. Langhans was the first to show that blood effused into the tissue did not simply disintegrate and disappear, but that the connective-tissue elements were actively at work, and that no small proportion of the colored corpuscles was ultimately taken into the interior of their protoplasm. This has been amply confirmed, and I think there can be no question as to the fact, but observers are by no means unanimous, however, whether the phagocytes are essential in the process. Probably in large extravasations only the peripheral parts are dealt with in this way. The fixed connective-tissue cells with migrated leucocytes all share, I believe, in the process. It must not be forgotten, as Neumann has pointed out, that pigment-granules in the interior of the cells may resemble blood-corpuscles very closely. However this may be, there can be no doubt that the cells are concerned in the transformation of the hæmoglobin; whether they take it up with the corpuscles or after it is diffused from them.

Remarkable differences exist in the final transformation of the hæmoglobin, resulting in the formation of two pigments—hæmatodin, which develops chiefly in the central parts of the extravasation, and an albuminate of iron, hæmosiderin (Neumann), which is formed at the boundaries of the clot and wherever the coloring matter comes in contact with the tissues. That this difference is related in some way to the influence of the cells is in the highest degree probable, though Neumann is not inclined, from his observations, to attribute an important action in this respect to either the fixed or wandering connective-tissue elements. The question is one to which a few years ago I gave some study in connection with development of cells containing red blood-corpuscles, and I was much impressed with the truth of Langhans' statement as to the frequency and numbers of these structures in the vicinity of extravasations of all kinds.

In the intestinal canal the leucocytes assist, to some extent at least, in the absorption of fat. Schaefer's observations upon this point [1] show very clearly that during digestion the amœboid cells of the mucous coat become filled with fat-globules. How these are obtained we do not as yet know clearly. Whether the fat penetrates between the epithelial cells, or whether the leucocytes pass up between the cells reaching to the surface and here securing the fat, has not been definitely determined; though from the presence of an occasional cell, or even a nest of cells between the cylinders, the latter view is probably the correct one. The leucocytes pass to the central lymph-vessels, where they disintegrate, and discharge their load of fat-granules, which has, meanwhile, in the protoplasm of the cell, been broken up into finer particles, which form the so-called molecular base of the chyle. Possibly, too, the leucocytes may take up other ingredients. It is interesting to note that in many of the lower animals the amœboid cells of the endoderm possess an active digestive function. The observations of Parker and Lankester appear to confirm fully the researches of Metschnikoff on the phenomena of intercellular digestion in invertebrates.

So far, we have been dealing exclusively with the action of phagocytes under normal conditions. And it is clear that these mesodermic cells have important functions throughout the life-history of the organism. Not only in the early steps in the development of the blastoderm do we see them actively at work, but in various stages of development, particularly in that of the bone, their action is of the first importance. In the mature body we have seen that in the lungs, in the intestines, and in the blood-making organs, the phagocytes have most essential functions, but the question of chief interest to-day relates not so much to this normal process, about which there has been so much doubt, as to the supposed part which these cells take in protecting the body against the invasion of parasites.

The theory elaborated by Metschnikoff had been hinted at by many previous observers, but to him is undoubtedly due the credit of bringing it into prominence,

[1] Deutches Archiv f. klin. Med., Bds. xxv., xxvii., xxxii., xxxiii.
[1] Virchow's Archiv, Bd. cx.

[1] Monthly International Journal of Anatomy and Physiology, 1885

and of doing in connection with it a very large amount of interesting work. It must be allowed that he came to his task well prepared. Many of us can look back with pleasure to his brilliant investigations upon the intercellular digestion in the planariæ and in sponges, carried on largely at the Naples Marine Station; investigations the truth of which, so far as I know, has not been controverted. Following these studies, directly in the same line, was his interesting research into the method of the absorption of the tail of the tadpole, already referred to, in which he appears to have demonstrated that the atrophy of this organ results in reality from the active removal of the fragments of the tissue by leucocytes.

So far the work was biological, and had no direct bearing upon the phenomena of disease further than that, in the latter illustration, it bore out the well-known fact of the absorption by leucocytes of foreign bodies placed within the tissues. In 1884, vol. xcvi. of Virchow's *Archiv*, he published a paper[1] which arrested the immediate attention of students in parasitology. It is now too old a story to narrate at length; it will be sufficient to remark that in the daphnia, the common water-flea of the aquarium, he had studied the relation of the leucocytes to a fungus with which these insects are prone to be infected. The phagocytes attack the fungi which enter the body-cavity from the intestines, and practically eat them, enclosing them in protoplasm. Where one cell is insufficient, several combine to enclose the spores in large plasmodia-like aggregations—giant-cells. If the invasion was in such large numbers, and the activity of the fungus so great, that conidia were formed, the resisting forces were insufficient; victory remained with the enemy, which meant the death of the daphnia. Of 100 insects studied, 73 became infected, of which 59 recovered and 14 died.

Following this line, Metschnikoff proceeded to study the relation of leucocytes to anthrax bacilli, to the micro-organisms of erysipelas, and to those various other affections. He likened specific inflammation to a warfare in which the invading army is represented by micro-organisms, and the resisting forces by the leucocytes. Even in details the analogy was maintained. Notice of the arrival of the invaders was telegraphed, so to speak, by the vaso-motor nerves; the line of communication, the avenues of mobilization, were represented by the blood-vessels. The aim of the invader is to secure the territory, to rapidly multiply, to live at the expense of his host, and to manufacture and circulate substances injurious to him. The aim of the resisting forces is to encircle the enemy, enclose him, digest him, and render him inert in battle. Many phagocytes die in the process, and, if in large numbers, the heaps of the slain represent pus; an abscess is a battle-ground densely packed with dead bodies. If victory remains with the invaders the organisms pervade the affected part, multiply, and induce conditions incompatible with the life of the part, or perhaps with the life of the entire organism. If the battle is with the host, the parasites are destroyed, perhaps not without loss, but the normal state is gradually restored. Practically, on this theory each organism is regarded as possessing a standing army composed of mesoblastic cells, capable of rapid reproduction and rapid concentration, one important function of which is to protect the organism against destructive agencies invading it from without. Certainly a most attractive theory, fully deserving the attention which it has aroused. On the one hand widely accepted, on the other bitterly assailed, the question is as yet far from settled, and to the position in which it stands I propose briefly to refer, and then to offer some results of my own observations upon a disease in which special facilities exist for the study of the problem.

Metschnikoff has studied a number of diseases, erysipelas, anthrax, relapsing fever, and tuberculosis, with a view to finding facts in support of this theory, and his communications within the past four years have been numerous and elaborate.[1] They have been so widely abstracted and so often referred to that I shall not occupy your time by entering into details, but will briefly indicate the chief points upon which he lays special stress in these different affections, and note certain of the observations which have been made by other workers.

In erysipelas the cocci are attacked first by the leucocytes filling the lymph-spaces, which rapidly proliferate, and actively eat the micro-organisms. Not alone do the colorless corpuscles act as phagocytes, but the fixed connective-tissue cells assist in an important manner. In cases of recovery he found that behind the advancing cocci the leucocytes were crowded with parasites which showed evidences of digestion and destruction. The connective-tissue cells do not appear to attack the cocci, but are chiefly concerned with the absorption of the inflammatory exudate, even taking up the leucocytes which have died. In fatal cases there was enormous development of micrococci, the majority of which lay free in the tissues not enclosed in the phagocytes. Inoculations with erysipelas cocci in white rats confirm these observations made in man. The leucocytes attack the parasites, which undergo rapid degeneration in the protoplasm. The larger connective-tissue cells, macrophages, did not attack the cocci. Metschnikoff recommends experiments upon these animals with the erysipelas cocci as an especially favorable field in which to study the struggle between the cells and bacteria.

In anthrax Metschnikoff has studied the relation of the phagocytes to bacilli introduced into frogs, which, as is well known, possess immunity at the ordinary temperature, but succumb when the temperature is raised. A graft of a piece of anthrax tissue under the skin of a frog is, within from fifteen to twenty hours, surrounded by leucocytes, which take up many bacilli. According to Koch, they may grow inside the cells and even burst them, but Metschnikoff holds that the anthrax filaments do not develop within the cell, but are gradually destroyed by them, and that this is the reason why the frog at an ordinary temperature recovers. In the heated frog the bacilli rapidly develop, and, the efforts of the leucocytes proving insufficient, the animal dies; not, it is asserted, from any inactivity on the part of the leucocytes, but because the bacilli secrete a liquid which protects them from attack.

In Baumgarten's criticism[2] he relates some experiments with the anthrax bacilli which directly antagonize these observations. Pigeons do not die when inoculated with anthrax, and he found that the bacilli injected degenerate in precisely the same way in these creatures as when in distilled water; only here and there did the leucocytes contain the rods.

He found that in frogs, though the bacilli are eaten by the leucocytes inversely to a degree of heat to which the animal is exposed, there is never total destruction of the bacilli by the phagocytes.

Hess[3] has performed experiments which bear directly upon these points. Anthrax cultures in Zeigler's glass chamber, inserted beneath the skin in animals not very susceptible to the disease, as dogs and birds, showed active migration of the leucocytes into the chamber, which appear to attack the bacilli and to destroy them. These very striking experiments certainly indicate what, of course, is well known, a high degree of activity on the part of the leucocytes, finding their way, as they do, into the chamber closed at all points except one narrow orifice. But, as Hess says, it is a question whether the disintegration in the cells necessarily means destruction by the cells.

In relapsing fever, Metschnikoff states that the spirilli are not attacked by the leucocytes in the blood, but are destroyed only in the spleen. In the artificially produced disease in monkeys, he finds abundant inclusion of the spirilli in the phagocytes of the spleen during the period of the rise in temperature before the crisis. This, how-

[1] Ueber eine Sposspilzkrankheit der Daphnien.

[1] Published chiefly in Virchow's Archiv.
[2] Zeitschrift f. klin. Medicin, Bd. xv., Hfts. 1 u. 2.
[3] Virchow's Archiv, Bd. cix.

ever, may simply mean that the spirilli, most of which gradually disappear from the blood at the crisis, have lived their life and are about to die, and in this state are taken up by the normal splenic phagocytes, just as are the effete red blood-corpuscles. He explains the recurrence of the second, or even of the third attack, of the fever by supposing that certain spirilli remain alive after the crisis and start afresh a new generation, which is not retarded in its growth, as the phagocytes are too busy in digesting the spirilli which they have eaten during the former attack.

An interesting study of phagocytosis has been made by Daehr,[1] a pupil of Ribbert, who has studied the effect of injection into the lungs of rabbits, through the trachea, of staphylococcus pyogenes aureus. Within a few hours the cocci are almost all to be seen within the alveolar epithelium, and in the leucocytes, which latter, in the course of a few days, disappear from the alveoli and pass into the bronchi. Meanwhile, the alveolar epithelium proliferates, causing a catarrhal inflammation. Within the first week the cells contain many cocci, which gradually become less numerous, and in the second week entirely disappear. He looks upon this as a confirmation of Metschnikoff's views.

In a second investigation, Hess[2] has studied, in rabbits and cats, the relation of the leucocytes to the staphylococcus aureus inoculated in the cornea. At first there is marked increase, which leads to an acute inflammatory process in the neighborhood of the cocci. The leucocytes increase rapidly, and within two or three days almost all of the cocci are within cells. In cases which recover, by the sixth day no cocci are found. When the process does not result in healing, the phagocytosis is slight.

Baumgarten[3] states that experiments made in his laboratory do not confirm these results of Hess.

Ribbert, in his study on the destruction of pathogenic bacteria in the body,[4] supports Metschnikoff's views. He found, after injection of the spores of aspergillus and mucor, that they collected in the organs of the experimental animals, particularly in the liver and lungs, and that within a few hours after injection they were surrounded by leucocytes, which either completely prevented or restricted the growth of the germs. Injections in very large quantities might not be sufficient to hinder the growth of the parasites, and the animal died. In the lungs and in the liver the phagocytes are much more active than in the kidneys. Precisely similar occurrences were found where the spores were injected into the anterior chamber, and it is worthy of note that he found on the anterior surface of the iris, in the neighborhood of the pupil, the phagocytes much more active and the disintegration of the spores much more marked than in the posterior part of the iris in contact with the lens. Ribbert holds that the destructive influence of the leucocytes is exercised chiefly by their preventing access of nourishment to the spores (particularly of oxygen), and in favoring, also, an accumulation about them of destructive metabolic products. He regards the fixed connective-tissue cells of the liver, and the giant-cells which develop in the liver and in the lungs, as the most important agents in the final destruction of the spores.

As we might suppose, the views of Metschnikoff have met with sharp criticism in many quarters, and from no one more ably or at greater length than from Baumgarten.[5] While not denying that the leucocytes eat the bacteria, he claims that the process is by no means universal, and is carried on so unequally that we can scarcely speak of an active warfare waged against the parasites.

As a specially weak point, he alludes to the powerlessness of the phagocytes in the daphnia disease so soon as the conidia are formed from the spores.

In relapsing fever, the freedom from attack which the spirilli enjoy in the blood is urged strongly against the phagocytic theory. The fact that spirilli are found in a number of cells of the spleen toward the crisis simply means that the phagocytes of this organ behave to them as to other foreign bodies. Probably, too, the spirilli begin at this time to lose their vitality, as is shown by their less active movements, and are then readily taken up by the splenic leucocytes in a manner precisely similar to effete blood-corpuscles.

In erysipelas, Baumgarten criticises the position in which Metschnikoff finds the parasites, namely, in the second zone, behind the advancing cocci, as conclusively showing that they are not fighters of the battle—not, as he expresses it, "the heroes of the day, but the hyenas of the field."

The observations of Christmas-Derkinck-Holmfeld[1] are also directly opposed to the theory of phagocytosis. He finds in anthrax experiments that very few of the bacilli are taken up by the leucocytes. In rats they degenerate within two or three days after inoculation, and for the most part outside of the cells. He holds that pus-formation is a conservative reaction against the penetration of the bacterial germs, but that the neutralization of the action of micro-organisms depends much more on the chemico-biological relations of the tissues than on any property of the cells to destroy them by inclusion. His view, in fact, approaches that of Ribbert, already referred to, in ascribing the limitation of bacterial growth to nutritive changes, particularly to the restriction of oxygen, rather than to any phagocytic action of the cells.

In Flügge's laboratory, observations have been made by Bitter and by Nuttall,[2] of San Francisco, which directly contradict those of Metschnikoff. Nuttall's elaborate experiments appear to show conclusively that the destruction of the bacilli in the living body is not effected by the phagocytic action alone.

And, lastly, in tuberculosis, the question of the relation of the cells to the bacilli is being carefully studied. In his recent paper on the subject,[3] Metschnikoff claims that the degeneration of the bacilli, which has long been known to occur within the giant-cells, results directly from their phagocytic action, and is not a natural decay. Baumgarten, on the other hand, regards the relation of the giant-cells to the bacilli as one of the strongest evidences against the theory of phagocytosis.

With the relations of phagocytes to bacteria, I have had so little practical experience that I hesitate to express any positive conviction on the question; but I have, for nearly three years, been working at a problem identical in all its relations, but in which the parasitic bodies belong to a higher class of organisms. I refer to malaria, and to the hæmatozoa which occur in the blood of this disease. A sceptical attitude in these days of hasty observation and of still hastier conclusions is peculiarly appropriate. I complain of no one who, without ample opportunities for personal study, claims the right to question the full significance of Laveran's important discoveries. Perhaps, better than anyone else, I am in a position to extend sympathy to the sceptic, as, until ample material came to hand in 1886, I was among those who looked upon the work of Laveran with extreme incredulity. The corroboration, in almost every detail, which his studies have received during the past three years is in all respects remarkable. Working as he did, alone in Algiers, under circumstances the reverse of favorable, without proper laboratory equipment, without the stimulus to be found in the association of men in large cities, it is not only in the highest degree creditable, but most encouraging, that an army surgeon, actively engaged in the duties pertaining to his battalion, could accomplish so thorough a piece of work, requiring but little subsequent correction, and receiving at all hands ample confirmation.

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[1] Abstracted by Bitter; Zeitschrift f. Hygiene, Bd. iv.
[2] Virchow, Archiv, Bd. cx. [3] Jahresbericht, Bd. 3.
[4] Abstracted by Bitter. Zeitschrift für Hygiene, Bd. iv.
[5] Loc. cit.

[1] Fortschritte der Medicin, 1887.
[2] Archiv für Hygiene, Bd. iv. I would particularly recommend the summary of Bitter to those wishing further details, and for a striking series of experiments, the paper of Nuttall.
[3] Virchow's Archiv, Bd. cxiii.

Richard, in France; Marchiafava and Celli, Golgi and his pupils, in Italy; Sternberg, Councilman, James, Shattuck, and myself, in this country; and Vandyke Carter, in India, working far apart, have all practically confirmed, with minor modifications and amplifications, Laveran's observations.

While the invariable association of these parasites with malaria would appear to be settled, their precise morphological relations are still a matter of discussion. I have urged, from their resemblance to other hæmatozoa, that they should be classed with the genus of Hæmatomonas (Metrophanow), which includes all forms of monads parasitic in the blood, of which a considerable number is known among the lower animals. Briefly, to refresh your memory, I may refer to the forms which occur in ordinary malaria. In the acute cases there exist in the red blood-corpuscles hyaline and pigmented bodies which undergo amœboid changes, and which gradually destroy the corpuscles, converting the hæmaglobin into a black pigment. Under certain circumstances, more particularly during the paroxysms, these bodies increase in size and undergo segmentation, breaking up into a number of small, free spherical bodies. In smaller numbers in the blood, but more constantly in the spleen, are the remarkable flagellate organisms. Lastly, in more chronic cases there are the still more extraordinary crescentic forms. Practically, the unanimity which exists in the statements of the observers above named regarding these bodies, places the question of their existence in malaria (and I may say, based upon the number of negative observations, in malaria only) beyond any reasonable doubt.

That they truly constitute the actual germ of the disease is, however, a point upon which opinions may differ. The constancy of their presence, their absence in other individuals in malarial regions, their abundance in the graver forms of disease, the destructive influence they exert upon the blood-corpuscles, are urged by Laveran in evidence of their pathogenic nature.

However this may be, the question which here concerns us relates to the relation between the phagocytes and these bodies. Surely one might suppose that here, if anywhere, the theory of phagocytosis might receive confirmation or rebuttal. What but phagocytes are the amœboid forms of these parasites which exist in the red blood-corpuscles, gradually destroying the stroma and the hæmoglobin until nothing but a shell remains? Here, indeed, are foemen worthy of the steel, or, rather, of the plasma, of the leucocytes. What, then, are the facts? How far can we say that in the blood in malaria, the seat most assuredly of the chief pathological changes, in acute cases, that there are evidences of a struggle between the phagocytes and the hæmatozoa. It has long been known that the leucocytes in this disease (particularly in chronic cases) contain pigment granules. There is no other affection in which melanæmia is so constant a feature, though it is now and then met with in other conditions. The leucocytes obtain the pigment either in the blood itself, or in the liver, spleen, or marrow, where the red corpuscles undergo their final destructive changes. In an examination of nearly one hundred and fifty cases of all forms of malarial affections, I have looked carefully at this point with a view of determining the exact mode in which the leucocytes obtain their pigment, and in my observations of the past two years the question of their relation to the various forms of the hæmatozoa has engaged my special attention. It may be remarked, in the first place, that there is certainly an increase in the number of white blood-corpuscles, an increase not associated, so far as I know, with any special change in the character of these bodies.

The result of my work in this direction may be stated in a few words. In the blood, at least, there is very slight evidence of the existence of phagocytosis. Here and there, it is true, we meet with leucocytes which have included the amœboid forms of the parasite, either free or still surrounded with the shell of a red blood-corpuscle. I have but three or four sketches in a whole series illustrating this fact. Occasionally a crescent may be seen within the white blood-corpuscle, more frequently the smaller free bodies which result from the segmentation. I have, in my paper on this subject, given a sketch of a leucocyte which was watched for an hour and a half, and had included one pigment body, and was about to take a second, behaving identically, though more deliberately, than its great prototype, the pond amœboid. I confess myself disappointed in this respect. It may be urged that in a blood drop, after withdrawal, the conditions are not favorable for study. But the absence of any great number of leucocytes, containing parasites, in a comparatively unaltered state, show that certainly in the circulating blood the leucocytes do not actively attack and eat the parasites. More probably, I think, they pick up the pigment granule after the disintegration of the parasite, or in such regions of the circulation as the spleen or the bone marrow where the conditions are more favorable to phagocytic action. Even on the warm stage, with the leucocytes displaying for hours amœboid movements, and in specimens which contained "foes" innumerable, it was exceptional to see evidence of active warfare.

It is, of course, more difficult to obtain evidence of the relation of the supposed contestants in the spleen, liver, and marrow, the organs in which regressive and progressive blood changes are constantly going on. I have not myself practised puncture of the spleen in these cases, as has been done extensively by Councilman. Fatal cases of malaria are not now very common. I have only had opportunities of examining two, both of chronic paludal cachexia, the result of prolonged exposure in Panama. One, an old man, admitted under my colleague, Dr. Musser, whose blood presented many of the characteristic forms; the other, a profoundly anæmic man, with a greatly enlarged spleen, but in whose blood very few of the parasites were found. In both instances the liver, spleen, and bone marrow showed characteristic melanotic changes. In the spleen the pigment in various shades, from brown to deep black, was chiefly in the thickened trabecular tissues and about the vessels. Teazed portions showed:

(1) Large numbers of leucocytes containing brownish-black pigment grains. A few of the leucocytes contained the small amœboid forms which had been noticed to be very abundant during life.

(2) Larger cells, containing red blood-corpuscles in all stages of degeneration. These cells were of various sizes, and contained a variable number of corpuscles, from eight to ten, or even more. Some of the red corpuscles contained amœboid parasites, but by far the larger portion of them presented the usual appearance met with in cells of this character in the spleen.

(3) Large, irregular, flattened cells, probably derived from the epithelium of the spleen capillaries, which contained granular black pigment, and occasionally red blood-corpuscles.

(4) Spindle or branch cells of the reticular tissue enclosing brownish or black pigment grains.

(5) Free pigment.

Practically the condition was similar, though more extensive in degree, to that met with in this organ, and in other febrile states associated with extensive blood destruction. I really could not say that the splenic phagocytes exercised any selective power in picking out for attack those corpuscles which contained parasites or crescentic forms, which in one of these cases existed in considerable numbers. The bone marrow in both cases presented microscopic changes characteristic of the lymphoid tissue, and had a grayish-brown color, due to excess of pigment. There were in it, in large numbers, marrow cells and ordinary leucocytes containing irregular pigment, and occasionally free amœboid forms of the parasites. The cells containing red blood-corpuscles were very abundant; but here, as in the spleen, it was partic-

ularly noted that the red corpuscles not containing the parasites were as frequently, or even more frequently, enclosed in the cells. In the liver the pigment existed in three elements:

1. In leucocytes, which seemed numerous in the lobular capillaries, particularly at the periphery.

2. In the walls of the capillaries, in all probability in the endothelial cells.

3. In the stroma cells, particularly of the interlobular tissue about the portal canals, where in places it was sufficiently abundant to cause ordinary diffuse pigmentation, a part of which was due to grains lying free in the interstices of the tissue.

Metschnikoff states that in malaria the parasites are attacked chiefly in the spleen and the liver by the larger phagocytes existing in these organs, and to a much less extent by the leucocytes in the circulating blood.

We see, then, in malaria very little evidence in the blood favoring a theory of phagocytosis; certainly no such campaigning on the part of the leucocytes as might be expected from the presence, in such numbers, of foes so destructive to the red corpuscles. In the spleen, bone marrow, and liver, the organs in which the dead or dying blood-disks are normally cremated, to use Weigert's expression, we have, as might be expected, an activity proportionate to the increased amount of material to be consumed, but scarcely such heightened phagocytic action as would indicate, on the part of the leucocytes, an aggressive warfare.

Into the interesting theory that to the action of phagocytes is due the immunity against certain diseases or against a second attack, I cannot now enter. In the present unsettled state of our knowledge it would be premature.

To conclude: While phagocytosis is a widespread and important physiological process throughout the animal kingdom, and while it undoubtedly plays a most important part in many pathological conditions, the question of an active destructive warfare waged by the body-cells against the micro-organisms of disease must still be considered an open one.

A British View of What the Profession Needs.—A correspondent of *The Lancet* writes as follows, under the caption of "The Protection of the Medical Profession:" "I quite agree with Dr. H—— that we want more *unanimity*, but the unanimity we want never has come, and I fear never will. We want the unanimity that will prevent twenty men rushing after an appointment which another man resigns because it does not pay. We want the unanimity that will prevent one man poaching on another man's manor. We want the unanimity that will prevent a man openly accusing his neighbor of improperly treating a case. We want the unanimity that will prevent a man with some means settling in another man's district where there is no scope, and by *underbidding* try to obtain patients from brother-practitioners who have bought old-standing practices. We want the unanimity that will prevent men from charging 4d. and 6d. for a bottle of medicine, 1s. for a visit, and touting for confinements at 5s. and 7s. 6d. each. If this unanimity could be obtained we should be quite able to protect ourselves. We could then be fairly remunerated for our services, and more respected. As it is, the public know our weak points, our readiness to work at any price or no price, and make fools of us accordingly. If, in the words of the poet, we could all realize that

> "'In fortune and in fame we're bound
> By stronger links than steel,
> And neither can be safe or sound
> But in each other's weal,'

the 'discordant units' might then be 'consolidated into one harmonious whole.' But when will that happy period arrive?" [A little of this unanimity appears to be needed at home as well as in England.—Ed.]

Original Articles.

CHRONIC INTERMITTENT FEVER OF SEVERE TYPE AND UNKNOWN ORIGIN.[1]

By GEORGE L. PEABODY, M.D.,

Professor of Materia Medica and Therapeutics, College of Physicians and Surgeons, New York; Attending Physician to the New York and St. Luke's Hospitals.

So far as I am aware medical literature contains but few cases at all resembling the one which I shall report this evening.

In 1887 Ebstein[2] reported a somewhat similar case under the title "Chronic Relapsing Fever, a New Infectious Disease." His patient was a delicate man, nineteen years of age, without hereditary taint, who had suffered for a long time from recurring attacks of fever in such a manner that periods of fever and of apyrexia alternated with a certain degree of regularity. In two hundred and eleven days the patient withstood nine such attacks of fever, each of which lasted thirteen or fourteen days, and during this time the periods of apyrexia averaged ten or eleven days in duration. In the attacks the temperature rose abruptly to 104°–105° + F., and then subsequently fell equally abruptly to the normal.

In this case, in which he says this fever had then run a tedious course of nearly a year, absolutely no complications developed, so that the course of the temperature was regarded by him as the sole symptom of importance. There was no delirium. The heart was very feeble. The examination of the blood revealed nothing abnormal. The digestive apparatus manifested the usual symptoms of fever. During the attacks the spleen was always swollen, but it always became normal in size again after their subsidence. The superficial lymph-glands were never enlarged. The attacks of fever could not be prevented by any treatment, such as the administration of quinine or arsenic.

Later in the same year, in the same journal,[3] Ebstein published the results of the autopsy of his patient, who, it seems, died after the eleventh attack, in coma, bed-sores and œdema having previously aggravated his condition. At the autopsy hard malignant lymphomata were found in the bronchial glands, and also in the mediastinal and retroperitoneal glands, as well as in the lungs, pleura, and liver. Infarctions were found in the kidneys and spleen. Fatty degeneration was present in the myocardium and in the muscles of the trunk, as well as in kidneys and liver. Thus the anatomical picture of pseudo-leukæmia, or Hodgkin's disease, seems to have been portrayed. He considers that his first title was well chosen as describing the disease, and thinks it proper to distinguish such cases from pseudo-leukæmia. No specific micro-organism was found to account for the disease, and he had no reason to suspect that it bore any relation to syphilis.

In the same journal[4] P. K. Pel, of Amsterdam, under the title "Symptomatology of so-called Pseudo leukæmia," describes a somewhat similar case. His patient was a man, aged twenty-five, who was under observation about four months. His symptoms suggested the presence of long-continued typhoid fever, in that his spleen was enlarged and in that his fever presented the peculiarity of frequent abrupt elevations of temperature following indulgence in solid food. Pel's case lasted from June 1 to October 6, 1884. It began very like a typhoid fever, with chilliness, nausea, dry cough, and pains in the abdomen. His periods of fever varied from a few days to two months in duration, and his periods of apyrexia varied from one to two weeks in duration. Throughout the illness the fever was the chief symptom. I am able to show you the temperature-chart, which gives the course of this

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[1] Read at a meeting of the Practitioners' Society, March 1, 1889.
[2] Berlin. klin. Wochenschr., 1887, No. 31.
[3] Loc. cit., No. 45.
[4] Loc. cit., 1885, No. 1.

patient's fever. The autopsy revealed a large spleen, very general enlargement of the mesenteric, retroperitoneal, and bronchial glands, but no involvement of the superficial lymph-glands whatever.

We will all admit that these were very puzzling cases. Whether the patient whose history I will now proceed to narrate to you belongs in the same category, only the autopsy, which is not likely soon to occur, can possibly determine.

My patient is a well-developed Danish girl, seventeen years of age, who entered the New York Hospital, April 14, 1888. For the history of this patient I am indebted to the kindness of Dr. G. H. Cobb of the house-staff. From his voluminous notes I have prepared my report of the case.

She was unmarried, and a servant by occupation. From her mother it was learned that the girl's father had died of "lung disease," and that the patient, when twelve years of age, had been very ill with "kidney disease," in the hospital at Copenhagen. At that time her most prominent symptoms seem to have been œdema of all the extremities, palpitation of the heart, and dyspnœa. As these symptoms began to pass away the child began to menstruate. This illness was not a complication of scarlet fever, diphtheria, or any acute infectious disease.

From that time to the present time, *i.e.*, for five years, she has had frequent attacks of high fever, without assignable cause, accompanied by very rapid and shallow respiration. These febrile attacks have been most marked during the days preceding the menstrual epochs, though they have not been confined to those times.

There has not been emaciation, and there has been but slight impairment of the general strength. Appetite has been fair throughout the entire time, and the general condition has been excellent.

Two years ago another similar illness was of such severity that the patient was again an inmate of the Copenhagen hospital. At that time severe headache, fever of varying intensity, anorexia, nausea and vomiting of daily occurrence, and constipation were the only well-marked symptoms.

This second severe illness was of six months' duration. She recovered completely, and subsequently came to this country. After eighteen months of comparative health she was admitted to the New York Hospital, April 14, 1888. She stated that for "some time" she had suffered from headache, vertigo, tinnitus aurium, palpitation, and occasional œdema of the feet. Four days prior to her admission she had had much abdominal pain in the neighborhood of the umbilicus, anorexia, frequent vomiting, and one slight hæmatemesis. She was constipated. When admitted her temperature was nearly 103° F., her respiration 66, and shallow, and her pulse 126. She suffered constantly from thirst.

A careful examination revealed no thoracic, hepatic, or splenic lesion. Her abdomen was distended and tympanitic. There was tenderness on pressure in the lower portion of the epigastric region, in the upper portion of the umbilical region, and, to a less marked degree, in the right inguinal region. There was no tumefaction to be felt anywhere, resonance was everywhere normal, the thighs were not flexed, the tongue was coated, the pulse was full and soft. The course of the temperature can best be shown by the accompanying chart.

In consequence of the fever, tenderness, and pain, as well as of slight resistance in the right inguinal region, it was thought that she might be suffering from perityphlitis. A vaginal examination revealed a sense of fulness in the right parametrium and posterior fornix, which seemed to be due to the presence of a soft mass in that situation which easily yielded to pressure. The uterus was freely movable.

Her temperature continued constantly elevated, as you see by the chart, for more than a week, and then there seemed to be felt by abdominal palpation a sense of deep resistance in the region between the right iliac fossa and the umbilicus. Soon pressure in this situation became decidedly painful.

The examination of her urine, which had been made immediately after her admission to the hospital, revealed nothing abnormal beyond the usual indications of fever. Inasmuch as the local abdominal symptoms continued, on April 22d she was etherized and operated upon for a supposed perityphlitic abscess. No abscess was found, but the vermiform appendix was found partly embedded in a mass whose appearance suggested the possibility of it being an enlarged lymphatic gland. This mass measured 2½ by 3 inches by 1 inch. No other abnormality was discovered.

She reacted well after the operation, but needed stimulants for a few days, owing to the fact that her heart seemed feeble.

Her urine continued normal in all respects, except that for a few days its quantity was only ʒ xx. per diem.

Her bowels were easily moved by laxative enemata, which were administered every other day.

Two weeks after the operation the abdominal wound had entirely healed, and her general condition was excellent.

For ten days following the operation the temperature had been but little above normal; but on the 4th and 5th of May it rose to the neighborhood of 102° and 103° F., respectively, without apparent cause. At this time she was given quinine, gr. v., three times a day, following which the fever seemed to abate distinctly, but only temporarily. Ten days later, during menstruation, the fever again appeared, presenting the picture of abrupt sudden elevation of temperature, usually in the afternoon or night, but occasionally in the morning.

At the time of this, the first menstrual epoch which occurred after she came under observation, she became quite emotional, and manifested an hysterical condition of mild grade. Respirations were very rapid, the face would flush deeply and frequently, and there were areas of anæsthesia in the upper extremities.

Her urine continued normal, she ate solid food freely, and her general condition was excellent, although for the next two weeks her temperature was rarely normal, and was often between 102° and 105° F. The rapid rise and fall remained characteristic. Every precaution was taken against possible deception on her part, the temperature being frequently taken simultaneously under the tongue, in the axilla, and in the rectum.

From May 13th until her discharge from the hospital, on August 24th, she was rarely twenty-four hours without fever. Her temperature was frequently normal once a day, but it rarely remained so, and it often rose as high as 104° F. and higher.

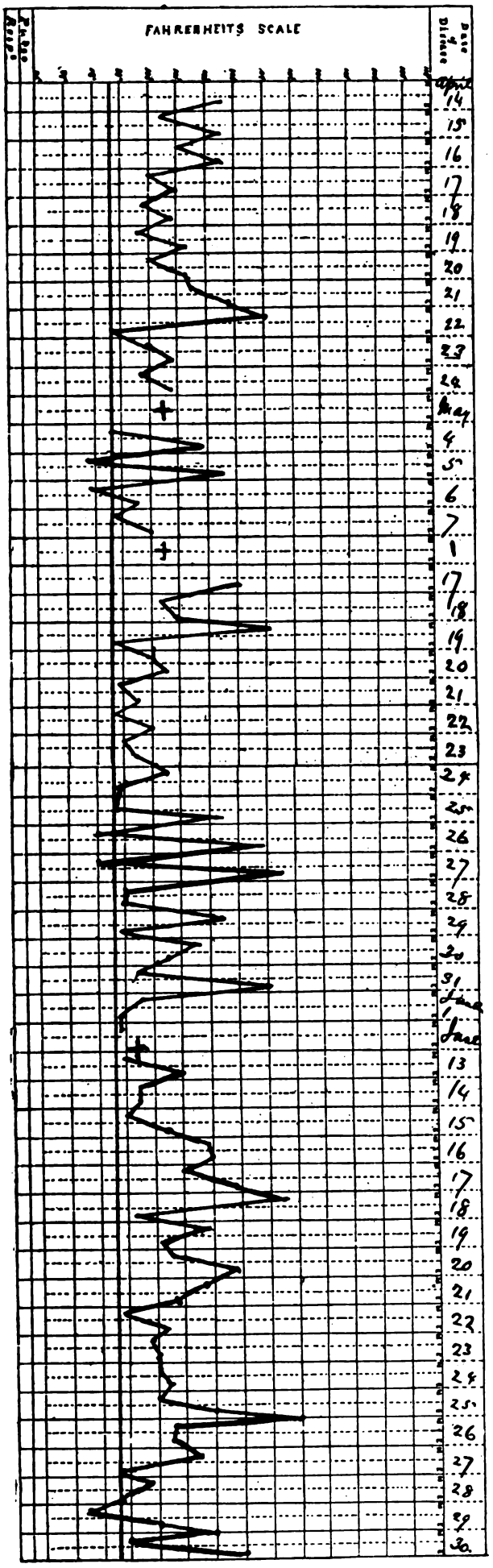
During much of this time she was up and about, feeling well and making no complaint, and occasionally out of the hospital for several consecutive hours. She was frequently given tonics, laxatives, and various antipyretics. She did not lose weight. When the sudden rise of temperature occurred her pulse would often become very rapid, and her respiration shallow and frequent. Occasionally it was noted that œdema of the legs, more especially of the left leg, developed after she had been moving about much, and once in a while albumen would appear in her urine, but never any casts.

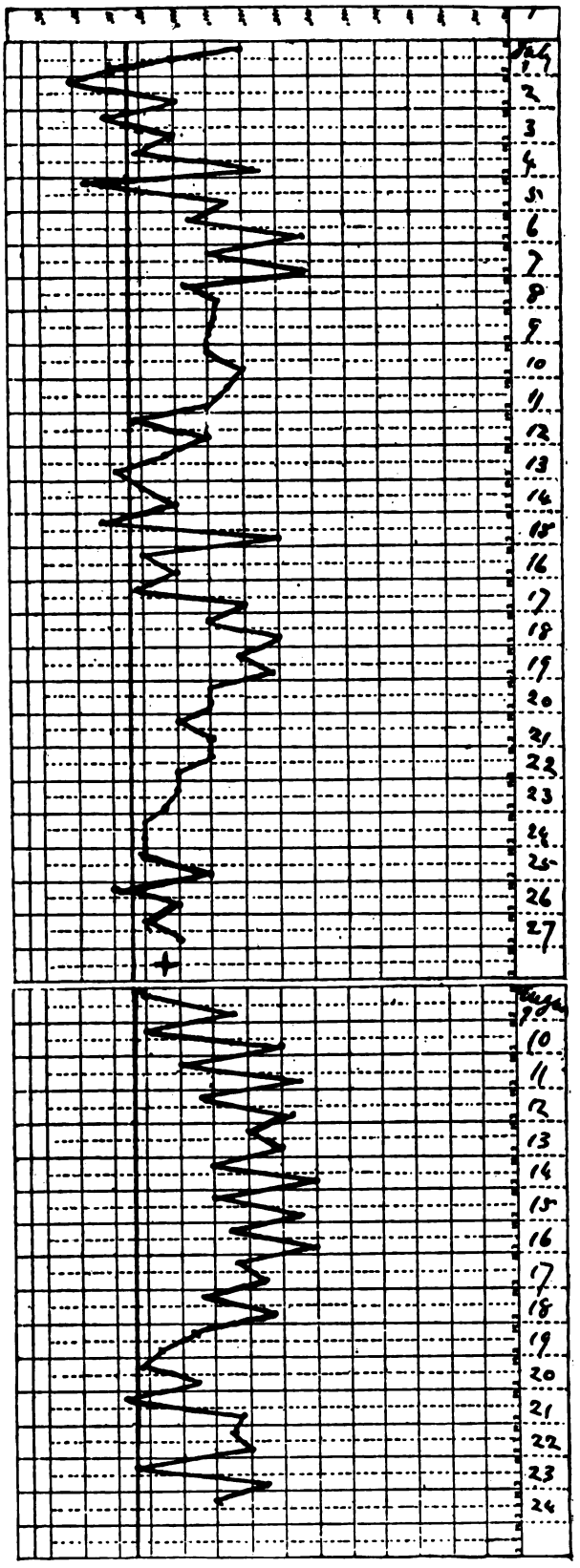
Careful examinations of her blood were made from time to time. The hæmoglobin was always deficient, but there were no other abnormalities at any time, such as micro-organisms, or disturbed relation in the number of the cellular elements. Notably there was never any excess in the number of white cells.

At her own request she was discharged from the hospital, August 24th.

On November 12, 1888, she applied again for admission.

She then stated that she had been in only fair health since leaving the hospital; that she had continued to suffer

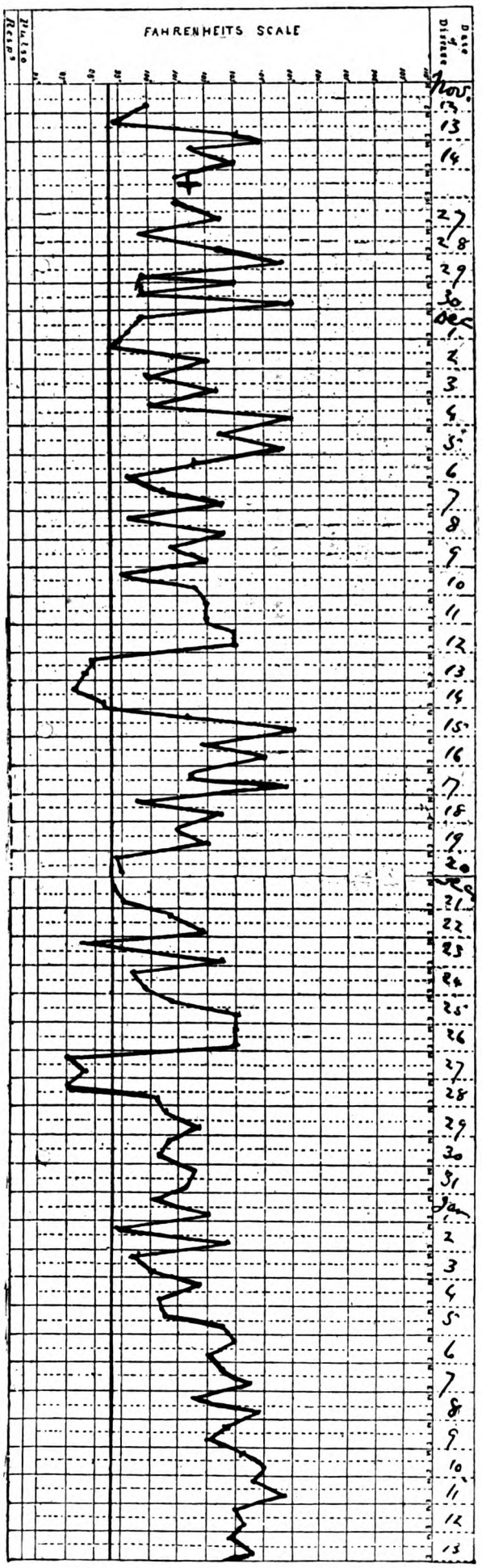


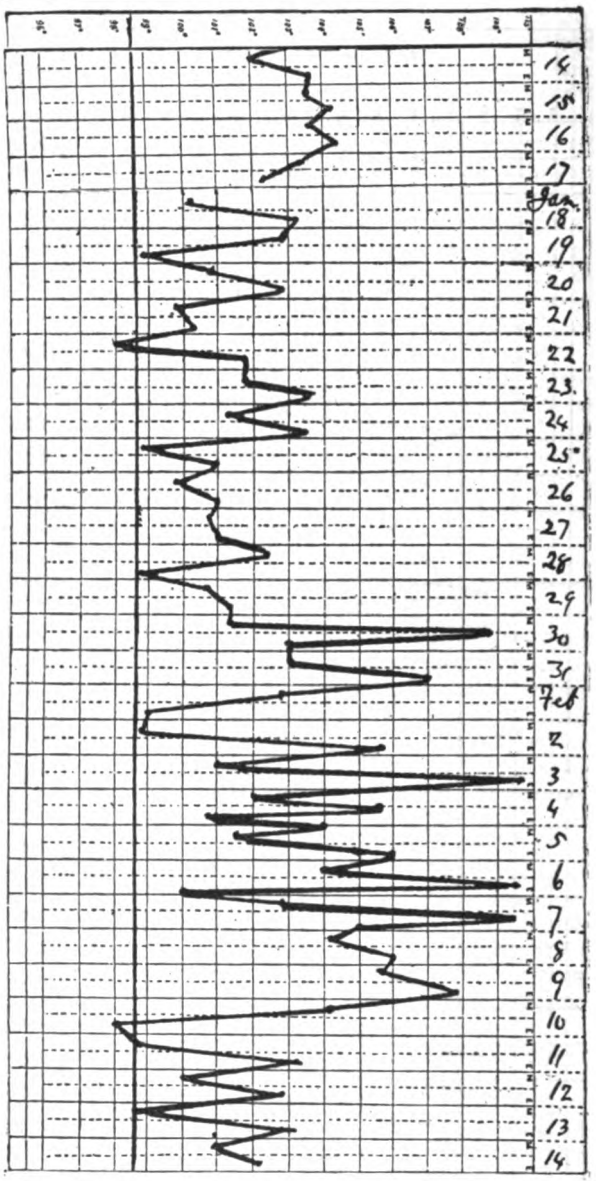


from occasional attacks of fever and headache, with fugitive and not severe precordial pains, and œdema of both feet and legs, more especially of the left.

A very careful examination revealed no thoracic or abdominal lesion. The day after her admission her temperature rose to 104° F., and she was put upon arsenious acid.

A careful microscopic examination of her fæces was now made, with the result only of ascertaining that there was rather an unusual amount of fat present in them. It occurred to me that possibly intestinal parasites might be





causing a certain amount of peripheral irritation, which might account for some of her symptoms; but I failed to find any evidence of their presence in the fæces. Her urine was normal in every respect, except as to the ordinary evidences of fever in it. There was no reaction to Ehrlich's test. She was still in excellent general condition. Up to the middle of December, or for a whole month after her readmission, her temperature was normal very rarely, being usually between 100° and 105° F. Frequently the vaginal temperature, as might be expected after eating or drinking, was several degrees higher than the mouth temperature.

Early in January she had an attack of pharyngitis, and after this her temperature rose rather higher and remained rather more continuously elevated than before. For more than a week now it rarely went as low as 102° F., and was frequently over 104° F.

During the latter part of January she felt well enough to be up. On January 30th, at noon, she had a chill, after which her temperature rose to 108.6° F. Later in the day three other chills occurred.

The next afternoon and evening she had repeated chills, and her temperature, which the day before had fallen as abruptly as it had risen, rose to 106° F.

During the next week chills occurred frequently and irregularly, often several times a day, and always with rapid rise of temperature. On one occasion it nearly reached 109° F., and on another, 110° F. There was but very slight difference between rectal and mouth temperature on these occasions.

I have rarely seen such severe chills as this girl had on these occasions. The entire bedstead was shaken, and her whole face became cyanotic.

The blood was again repeatedly examined for malarial or other organisms, with negative result.

The surface temperature, in various parts, would often be normal when the rectal temperature was 104° F.

On February 5th she had a chill at 6.30 P.M., after which her pulse, respiration, and temperature were, respectively, 156, 56, and 108° F. This was soon followed by a severe convulsion, during which she did not lose consciousness, and which bore many resemblances to an hysterical attack.

In this convulsion the pupils were equally dilated, and reacted to light. There was no ocular deviation. Face was not drawn to either side. Tongue was not bitten. There was no frothing at the mouth. Cervical muscles were in a state of tonic contraction; forearms were flexed on arms, and both arms drawn toward median line of body; hands were flexed on wrists; fingers extended; thumbs flexed. There was no fibrillary contraction of any muscles. Legs were flexed on thighs, but were extended by patient when she was told to do so. Hands and arms were plastic, being easily changed in position, and remaining as they were placed. Convulsions, later during the week, were of same character, and none were more pronounced than this.

On the next day there occurred another chill at 2.30 P.M., which lasted twenty-five minutes. After this the temperature rose to 107.4° F. At 7.45 on the same evening another chill was followed by a temperature of 109.2° F.

On February 7th and 8th chills recurred, each time with high fever. A careful record of her weight had been kept, and it was now found that she had lost seven pounds since her return to the hospital.

On February 8th the actual cautery was applied freely on both sides of the spinal column. After this her temperature in a few days rose once as high as 107° F., but thereafter, as the chart shows, it slowly declined, with occasional marked fluctuations, until the 21st, since which date it has never been above 100° F.

By the 22d it was found that she had regained six of the seven pounds of weight found to have been lost only two weeks before. When the temperature was very high, occasional doses of phenacetine were administered.

About the middle of February she suffered somewhat from a carious tooth, which was subsequently extracted.

After the cauterization of the back the cautery was left beside the patient's bed, with the understanding that it would be immediately applied if any convulsive seizures came on again. She was also told that she would be moved to an isolating room and shut up there, if they should recur.

On February 10th the head-nurse of the ward, who had been absent since January 30th, returned, and under her restraining influence two seizures were aborted on the 12th. The ward had been in confusion during her absence, and with her return and the general quiet which followed, the patient seemed to improve rapidly. It is to be noted, however, that the chills, and very high temperatures following them, began in the previous month before this excellent nurse had left the ward.

Nothing worthy of note has since occurred to her, except that, during the intensity of toothache, temperature, respiration, and pulse were all lower than before. Also, during the height of her fever the patient gained in weight. Examination of the urine on three occasions showed that it contained 14.4 gr. of urea to the ounce.

She has now been under observation nearly eight months, and during that time she has rarely been as long as a week without fever until quite recently. No treatment has seemed to affect the course of the temperature, unless the recent application of the cautery has done so, and the nature of the cause is still enshrouded in doubt. Her fever has, at times, been of very unusually high grade, and nevertheless her nutrition has not appreciably suffered, except temporarily.

The pulse and respiration were often extremely frequent.

I have but little to add in the way of comment in submitting this case to you for discussion. Under the impression that ague might be the cause of her symptoms, quinine and arsenic were faithfully tried, without result, and blood-examinations were always negative. Her general treatment has been tonic and sustaining.

That an element of hysteria exists in the girl no one can question; but whether that is more likely to be a cause or a consequence of her other symptoms remains with me a matter of doubt.

That I may have to do with a case of pseudo-leukæmia I feel well aware, and yet many of the manifestations that I have described to you, such as chills and convulsions, with phenomenally high fever, can hardly be said to apply to that condition. It seems to me that her case is either a combination of hysteria with pseudo-leukæmia, the latter running a very unusual course, or else she is suffering from a hitherto undescribed chronic infectious disease.

Two or three years is the usual maximum duration of pseudo-leukæmia, whereas this one has lasted six. Besides, there is no enlargement of spleen, or any superficial lymphatic glands. Her abdomen is flaccid, and deep palpation fails to reveal the presence of enlarged retroperitoneal glands. On the other hand, at the surgical operation, at which I was not present, the vermiform appendix was seen to be partially embedded in what looked like an enlarged lymph-gland.

The vaginal examination, again made last week, revealed nothing abnormal.

SUSPENSION-TREATMENT OF LOCOMOTOR ATAXIA AND OTHER DISEASES OF THE NERVOUS SYSTEM, WITH REMARKS AND AN ILLUSTRATIVE CASE.

By WILLIAM J. MORTON, M.D.,

NEW YORK CITY.

Le Progrès Medical of January 16, 1889, containing a striking announcement by Professor Charcot concerning the treatment of locomotor ataxia, and incidentally of some other nerve-affections, by suspension of the body of the patient, reached this side of the water promptly, and the method outlined was immediately put in practice by the writer, and doubtless by other physicians, since anything which offered even a moderate relief to this class of incurables could not fail to attract close attention.

Little, if anything, upon this subject has up to this time appeared in our current medical literature, and it therefore appears to me, after a continued experience of over two hundred suspension-treatments in a considerable number of cases, to be a proper time to venture a few remarks upon this new treatment and the method and apparatus employed, recording at the same time from among those treated a single and by no means exceptional case illustrative of what may be accomplished, in the hope that others who may have given the subject attention will publish their views. It may fairly be assumed that a considerable literature will spring up in the wake of the entry of this recent phase of nerve-stretching into the medical practice of the day.

For Charcot's announcement and results embody, in a practical manner, and apply to the spinal cord that idea of stretching or elongating individual nerves which has been groping its way in a variety of forms into general practice during nearly two decades, beginning with Nussbaum in 1872 for the relief of contractions—some years later extended to the surgical stretching of the sciatics in locomotor ataxia by Langenbeck, and still later more popularly assuming the form of "bloodless stretching" or elongation by passive movements. The operation, surgical or non-surgical, has been extended to a great

variety of morbid nerve-conditions and diseases and with results in many of them which have far surpassed those before obtained by other means in similar cases.

But while the surgical operation was the most effective, it could not in the nature of things be frequently repeated on the same nerve, and while the passive movement could be frequently repeated it was not equally effective. Another step remained to be taken, and that we now seem to have reached in suspension. And favorable as has been, on the whole, the history of individual nerve-stretching, no contribution to the subject in general, in the opinion of the writer, has equalled in importance this most recent procedure.

Professor Charcot states that the idea of this treatment belongs to Dr. Motchoukowsky, of Odessa, who published it in 1883 in a brochure which has, up to this time, attracted little attention, and that in his brochure Dr. Motchoukowsky speaks of having treated, and considerably ameliorated, twelve tabetics, at the same time re-establishing, by the same operative procedure, the sexual functions of other patients suffering from impotence of nervous origin, independent of tabes. The treatment consists in the suspension of the patient during a period varying from one to four minutes, by means of the apparatus so effectively arranged by Dr. Sayre, of this city, for the rectification of deformities of the vertebral column while applying his plaster jacket.

The results[1] arrived at at the Hospital of La Salpêtrière, under Charcot's general supervision, may be briefly summarized as follows:

The suspensions take place every other day, this seeming to give better results than if repeated daily. Their duration is progressive. At first one-half minute, and increased by one-half minute daily until, as has been said, a maximum of four minutes is reached. During suspension the arms should be frequently raised, that the traction upon the vertebral column may be increased.

Eighteen tabetics had been treated by a total of about four hundred suspensions. Of these four are omitted from consideration because of not having been treated but three times, owing to their inability to reach the hospital. The fourteen others experienced an improvement which, with eight in particular, was altogether remarkable.

At the beginning of treatment the improvement first appeared in the gait and in the power of co-ordination. The patients walked better after each suspension, and this effect, while at first only of a few hours' duration, after eight or ten treatments became continuous. The patients stood erect more easily, and walked greater distances with more ease. After twenty to thirty treatments the swaying disappeared, and the vesical troubles improved. The shooting pains became less frequent, and in some cases ceased. Where complete impotence existed the sexual power became restored. Numbness of the feet and plantar anæsthesia disappeared. In conclusion, all the patients treated improved in different degrees and the improvement appeared to be in direct relation with the duration of treatment.

The cases of locomotor ataxia that I have thus far treated by this method are six in number, submitted to over two hundred suspensions, and all occurring in private practice—a number small as compared with that which may be easily got together in hospitals and dispensaries, and not sufficient to justify any permanent conclusions, but sufficient on the other hand to carry the conviction to my own mind that by no other means has equally marked, progressive, and decided improvement been attained. My experience leads me to confirm in every particular the results observed in the eighteen cases at La Salpêtrière. But as it is not my purpose at this moment to record these cases, since the treatment has not yet been sufficiently long continued, I will content myself with the brief record, so far as it has advanced, of one case which offers perhaps more striking points than any of the others.

Thomas H——, Morristown, N. J., aged thirty-five, married. February 28, 1889. Entered office with extreme difficulty, using two canes and with his eyes closely watching his feet to prevent falling. Falls at once even with canes unless he can *see* his feet. He had previously visited me in November, 1886, on account of "rheumatic pains in the legs" and "trouble with his eyesight." The pains I found to be sciatic, of a mild type, and as to his eyesight, the obvious feature was a pronounced diplopia. I referred him to Drs. Agnew and Webster, and did not see him again until the present entry. I suggested to him at the time the possibility of an incipient "trouble with the spinal cord," having tabes in my mind, but recovery from double vision seems to have satisfied him. Dr. Webster's report upon the condition of the eyes at this date is given later on. Further symptoms may be briefly mentioned as follows:

Ataxia; with inner surface of the feet approximated and eyes closed he falls at once, unless sustained. Gait tottering and swaying, quick "slinging" to one side or the other; front of thigh muscles in tonic contraction; "can't walk with eyes shut or in the dark unless has hold of something;" inco-ordination of legs with purposed movements extreme; no extension of disease to the arms.

Pain.—Severe lancinating pains in both legs began about one year ago. He then "had very severe sciatica;" was six weeks in bed, and was under treatment by Dr. Becker, of Morristown. After this attack the legs seemed to become unmanageable and "tired all the time." "Couldn't control them in getting into a wagon or going upstairs." Has had many attacks of "sciatica;" since and after each one the use of the legs became more impaired. The last and worst attack was in November, 1888, and he has scarcely left his house up to his present visit to me. Severe pain in lumbar region at times.

Other sensory disturbances.—"Girdle" sensation from knees down to ankles. Legs from below knees feel as if tightly bandaged, are numb and generally cold, especially the back part of the leg. "Feels as if walking on some strange object," and often removes his boots in order to adjust his socks. "Legs get very tired after walking a little."

Other symptoms.—Urination very slow. Immediately following November, 1888, had increased sexual desire—now practically impotent. About every other night has an involuntary seminal emission which wakes him up. Associated with this are dreams.

No gastralgic, nephralgic, or bronchial attacks. No especial vaso-motor disturbance, except feet always cold. Only trophic disturbance, a recent severe attack of herpes on the inner surface of the forearm. Knee-jerk abolished.

Any history of venereal disease denied, and no evidence of it discoverable.

Eyesight.—Sees with difficulty since attack in November, 1888. After having been under suspension-treatment over a month I referred him to Dr. Webster for a report upon his eyesight with a request for notes upon the previous examination. Dr. Webster very kindly furnished me this record.

"April 4, 1886.

"Dear Dr. Morton: The following is a copy of my notes:

"November 15, 1886.—Thomas H——, aged thirty-two. Says he 'can't see to drive at all.' He has been laid up with rheumatism. R. V. = $\frac{20}{100}$; $\frac{20}{20}$ with $-\frac{1}{14}$ L. V. = $\frac{20}{100}$; $\frac{20}{20}$ with $-\frac{1}{14}$. Ophthalmoscope shows atrophy of both optic nerves; atrophic excavation of disks and lessening of size of retinal arteries. Patient had 'malaria' five years ago. Ord. $-\frac{1}{15}$ for both eyes.

"November 22, 1886.—The glasses make his eyes ache

[1] Le Progrès Médical, January 16, 1889: De la suspension dans le traitement de l'ataxie locomotrice progressive, etc. Résumé de la leçon du 15 Janvier, 1889, par M. le Dr. Gilles de la Tourette, Chef de Clinique.

Le Progrès Médical, February 23, 1889. De la technique à suivre dans le traitement par la suspension, etc. Par M. le Dr. Gilles de la Tourette, Chef de Clinique, etc.

very much. V. = $\frac{2}{3}\frac{0}{0}$ with them. Ordered to change to $-\frac{1}{24}$ which give V. = $\frac{2}{4}\frac{0}{0}$ and are much easier to the eyes.

"January 22, 1887.—R. V. = $\frac{2}{4}\frac{0}{0}$; L. V. = $\frac{2}{1}\frac{0}{0}\frac{0}{0}$ with his glasses ($-\frac{1}{24}$).

"April 4, 1889.—R. V. = $\frac{8}{1}\frac{0}{0}\frac{0}{0}$; $\frac{2}{1}\frac{0}{5}$ with $-$ 2.50 D. L. V. = $\frac{2}{1}\frac{0}{0}\frac{0}{0}$; $\frac{2}{1}\frac{0}{5}$ with $-$ 2.50 D. V. = $\frac{2}{3}\frac{0}{5}$ with $-$ 2.25 D, both eyes, $\frac{2}{1}\frac{0}{5}$ with both at once. Hyperphoria O°, esophoria 3°, with or without correction of refraction. Sursumduction, R. 3°, L. 3°; abduction, R. 6°, L. 9°; adduction, 18°.

"Ophthalmoscopic examination shows atrophy of both optic nerves, more marked in left eye. Retinal veins normal or slightly enlarged; retinal arteries diminished in size from one-third to one-half. Atrophic excavation of both optic disks. Pupils react slowly to light and to accommodation. The greater contraction of his visual and color fields in the left eye than the right corresponds to the more advanced atrophy of the left optic nerve. It is remarkable that he retains perfect central vision.

"Yours sincerely,
"D. WEBSTER."

Dr. Webster notes that the pupils react slowly to light; this was after about twenty suspensions. Before treatment there was absolutely no reaction to light. In another case, after about an equal number of suspensions, the pupils, from "pin-point" and no reaction, have returned to their normal size and react well.

Treatment.—Suspension.

March 6th.—Suspension now three minutes every other day. Had a severe cramp, like a "crick" in the back of the neck; lasted about a minute and soon wore off. The back strap of the apparatus against the neck probably pressed in upon the muscles, already in a state of abnormal irritability. It should bear squarely upon the occiput.

March 8th.—Suspension, five minutes. Walks better; stands better with closed eyes; legs less heavy and tired. Herpes on left arm severe. Again a cramp of brief duration.

March 15th.—Improvement in gait now very manifest. Has never since November last been so free from pain; "legs don't ache as they did when he goes to bed." Can now walk with a fairly free step and without any cane and without watching his feet; however, in doing this he still swings unexpectedly to one side or the other.

Patient was obliged to return to his home, and was furnished with an apparatus with instructions to suspend himself every other day.

April 4th.—Patient enters the office in striking contrast to his first visit. He carries a light cane, more from habit than from necessity, and walks with a long free gait. Allowance, of course, is to be made for the effort to do his best; but, as evidence of his improved walking, he mentions that friends walking behind him had not believed it could be he, so well was he walking. Has no pain in his back, and has had but one sciatic attack during his absence. This attack lasted four hours, whereas it ordinarily lasted two days. The pain was not severe. Improvement is equally well marked in standing with closed eyes. He can do so with but a moderate swaying of the body. The pupils now appear about normal and contract by light; knee-jerk continues to be absent; the slow urination has become free. The seminal emissions have ceased—he "wakes up just in time to stop it." Impotence has almost disappeared. There are no abnormal sensations about the legs and feet.

April 5th.—Yesterday patient felt his power to walk so much improved that he had walked without immediate fatigue fifty blocks, or two and one-half miles, and climbed the Elevated Railroad stairs several times; therefore today his gait is less free but still good; his legs felt tired. I was at first in doubt whether under these circumstances to suspend, but did so for five minutes, he himself drawing himself up until the tips of his toes just touched the floor. The immediate result of the suspension was remarkable. All sense of fatigue disappeared from the legs and he again walked with the freedom of the day before. Previous to treatment he could with great difficulty walk one block, and could not walk even across his room without the aid of two canes.

Summed up we have, in this case, attacks of shooting pains ceased; walking improved, from the restricted gait of the confirmed ataxic to a fairly free and long stride; swaying symptoms with closed eyes improved from a condition of precipitate fall to a sustainable though moderately swaying attitude; pupils exhibiting accommodation to light and more naturally dilated; sexual power fairly well restored; girdle sensation and other sensory disturbances about the legs and feet disappeared, and urination with natural flow in place of retardation.

I should add here that other cases now under treatment improve mainly in similar respects, some more, some less, but all showing a steady gain.

In a suspension-treatment begun March 2d, during a sharp attack of pain, the pains ceased immediately after the suspension, and the patient fell into a refreshing sleep.

In another case a profuse discharge from the great toe-joint has almost ceased.

In no case has any untoward result occurred, with the exception of the cramp in the neck alluded to, and in one case an increased hyperæsthesia of certain large areas of skin. In this latter connection may it be true that slight elongation of the spinal cord increases its irritability, while greater elongation diminishes it, just as in the trunks of individual nerves? From this point of view, differences in the results which may be recorded in forthcoming reports of cases may be explained.

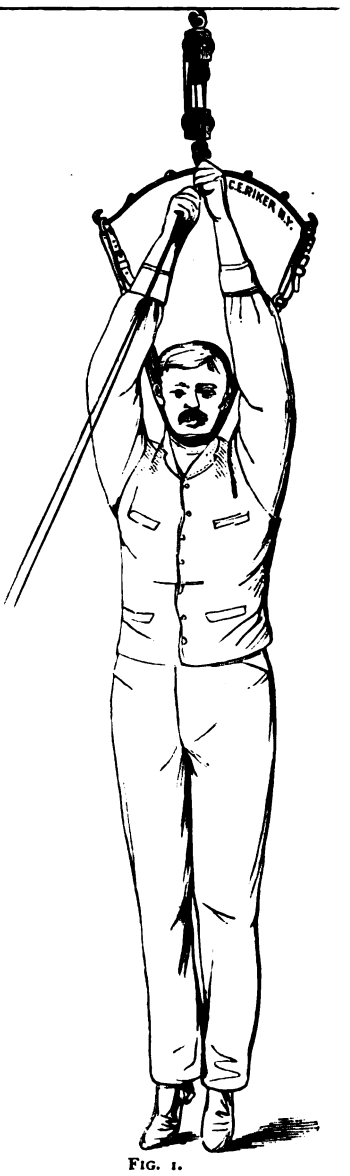


FIG. 1.

In respect to the influence of suspension upon impotence, the curative effect produced is only another of many curious illustrations of the fact that science often arrives at a rational treatment which has been previously popularly and empirically known. Years ago, in Paris, a brief "hanging" as a cure for this trouble was commonly spoken of as a treatment—extreme, to be sure, but frequently practised and often efficacious. In this same connection it may be borne in mind that the post-mortem inspection of criminals who have suffered death by hanging has revealed that a seminal emission had occurred. One further peculiarity of the suspension-treatment of the cord in tabes is the rapidity with which a change in symptoms is brought about. The effect is often immediate, and though of but few hours' duration may be again secured

at the next suspension, lasting apparently longer and longer, in direct ratio with the renewals of treatment.

The Sayre suspension-apparatus complete has a tripod and arm-straps. In place of the tripod a strong hook may be screwed into a beam in the ceiling. In regard to the arm-straps, I find in practice that they may be omitted in a large number of cases, with great advantage. For, so far as the suspension-treatment goes, patients having locomotor ataxia divide themselves into (1) those who can use their arms and suspend themselves, and (2) those who cannot use their arms to pull upon the ropes and must be suspended by another.

The former class may be treated, it seems to me, to the best advantage as shown in Fig. 1. The raised arms, straight or nearly so at the elbows, give a maximum distance between the distal extremities of the brachial and sacral plexuses, elongating the spinal cord for that reason and joining the effect thus produced to that brought about by the suspension of the body from the head. There is the further advantage that the patient feels more confidence in being allowed to gradually pull himself up. To secure the full advantage of this self-suspension I have invented a handle which, while sliding up the rope with freedom, will grip it on being pulled downward. Thus the patient gains each fraction of an inch that he can push his hands up and is relieved from the cutting of the rope, unbearable even to a sound person when protracted to five minutes.

FIG. 2.

This apparatus will be described in a subsequent issue of THE MEDICAL RECORD.

For the second class of patients, viz., those who must be suspended by another, and many of whom are practically so much dead weight so helpless have they become, the arm-straps are indispensable. Such a patient may be first placed in a chair and the arm straps adjusted so as to take a fair portion of the weight of the body, the head-strap adjusted to take a certain other portion of this weight, and, finally, when all is ready, while an attendant steadies the patient and raises him upright, the physician may bring about the desired suspension.

Figure No. 2 represents an instance of this class.

As to the duration of suspensions, I find it a simple matter to begin with from one to two minutes, and extend it to from five to seven minutes. Every other day seems to be often enough. The toes probably should not leave the floor in self-suspension, nor in suspension by the arm-straps, but I have patients of light weight who can swing themselves clear of the floor, and have myself unintentionally raised the helpless class, wearing arm-straps from the floor. The better plan, with patients of this latter class, would seem to be that suggested by Charcot, viz., to suspend them as much as practicable from both head and axillæ, the balls of the feet resting upon the floor, and to raise the arms frequently in order to hang additional weight upon the head.

Finally, what are the effects of suspension upon the healthy spinal cord; what the cause of the effect upon the diseased cord; is it due to a diminution of the irritability of the cord by stretching it and temporary, or, by reason of frequent and forced reduction of abnormal irritability, likely to become permanent; whether the cord can or can not be actually elongated; what results may be obtained in other diseases, and whether a restoration of function may not influence the condition of a lesion? All of these questions and many more of them, some of them speculative, some of them demonstrable, arise, but extend far beyond the scope of this present communication.

The subject is but just entering upon its experimental and clinical stage even in locomotor ataxia, but if we accept the facts thus far reported, and if they prove to be repeatable in a large number of cases, we shall be obliged to admit that the sum total of improvement and cure, be it temporary or permanent, is far in excess of that attainable by any previous means, and as such must be regarded as the most signal advance yet made in the treatment of this hitherto intractable disease.

Progress of Medical Science.

JAUNDICE FOLLOWING A STROKE OF LIGHTNING.—Dr. C. Gerhardt has published an account of the case of a person who had been struck with lightning. The patient came under treatment a few hours after the accident, having regained consciousness, but having no remembrance of what had occurred. The course of the current was shown by burning of the hair, and by the characteristic arborescent figures, especially on the back. There was hæmatogenous jaundice, apparently due to the action of the electric current on the coloring matter of the blood, and the nerves and muscles were over-sensitive to both the faradic and the galvanic current.—*The New York Medical Journal.*

A CASE OF EXOSTOSIS BURSATA.—As a rule, the reports of the removal of tumors by surgeons have lost their charm for the general reader, but cases of extreme infrequency always excite interest. Such a case is that reported by Dr. Bell (*Annals of Surgery*, February, 1889), which is, as far as he can learn, the third of its kind described in medical literature. His patient, a stout, healthy man of twenty years, entered the Montreal General Hospital in March, 1888, suffering from a tumor on the inner side of the lower end of the right femur. It appeared nine years before, being, when first noticed, as large as a marble, soft, and movable. Growing steadily without pain, it had become firmly attached to the bone five years after its appearance. Dr. Bell cut into the tumor, which was now as large as a base-ball, meeting first a synovial-like sac from which an ounce of liquid resembling synovial fluid escaped. In this fluid were floating fifty-five pieces of hyaline cartilage of the size of a pea or bean. Surrounded by the fluid, except where its bony pedicle, ¾ by ½ inch in diameter, united it to the linea aspera below the epiphyseal line, was an osseous mass as large as a Fameuse apple, having its irregular surface covered with a mosaic of small isolated pieces of cartilage. The sac, which became continuous with the periosteum at its attachment to the linea aspera was lined with a synovial membrane like that of the knee-joint. The osseous growth was cut off with a chain-saw, its base was chiselled

smooth, and the patient quickly recovered. The first case of this sort was reported by Billroth in 1863, and Rindfleisch, after carefully studying it, decided that the growth had originated as an ecchondrosis of the cartilage of the joint; this afterward pushing out a portion of the synovial membrane which became detached and formed a separate sac for it. The second case, seen at Bergmann's clinic in 1884, was studied by Fehleisen, who decided that such growths were the result of accidental separation from the border of the joint elements, in very early fœtal life, of a group of cells which lay a long time inactive, and afterward developed bone, cartilage, and synovial membrane. Volkmann, reasoning from the presence of simlilar bodies in exostosis bursata connected with pseudo-arthrosis of the femur, and in ganglia, thinks that the growths under discussion develop from existing epiphyseal cartilage or joint cartilage according as they are extra- or intra-articular. Dr. Bell is sure that in the two cases described by Billroth and Fehleisen, as well as in his own, the growth was quite distinct both from the joint and from the epiphyseal cartilage. His case throws light upon the formation of floating intra-articular cartilages, which may be considered as bodies, arising from cartilage cells existing in the tufts of the synovial membrane, and becoming subsequently detached from their bases.

Blennorrhœa in Women.—During a period of six years Horand has had under his care 5,090 women and 764 little girls suffering with blennorrhœa, and it is upon this large number of observations that he gives us the present study. He is a firm believer in the gonococcus as the cause of blennorrhœa, and teaches that where the gonococcus is not found there is no blennorrhœa. In the women the parts affected are, in order of frequency, the urethra, vagina, glands of Bartholin, uterus, and anus. In little girls the order is vagina, urethra, vulva, and anus. Urethral blennorrhœa in women causes little disturbance; it may give rise to slight itching or more frequent urination; cystitis is rare. It may continue a long time, months or years, and is apt to remain limited to the urethra. Inflammation of the vulva is rare in women, more frequent in girls. It is generally consequent upon mechanical irritation, want of care, direct contagion, attempts at rape, or accidental from contact with objects soiled with blennorrhagic pus. It may exist alone or associated with elytritis or urethritis. The epithelium of the vestibule seems to offer a good deal of resistance to infection. Elytritis is more frequent—rather more in girls than in women. Uterine blennorrhœa is very rare—it was found only six times in four hundred and eighty-three examinations. It is the result of transmission from the vagina. Bartholin's glands are affected only secondarily. Anal blennorrhœa is more frequent in women than in men. It is the result both of mediate and of immediate contagion. Gonorrhœal rheumatism is very rare in women, as is gonorrhœal ophthalmia. For the treatment of urethritis the best means is nitrate of silver, a grain and a half to the ounce. For elytritis in a child, irrigations with a warm boric acid solution of one per cent. strength should be used; in adults, the silver nitrate in stick applied directly every four or five days. The same treatment is also best for the disease when it affects the uterus, the anus, or the conjunctiva.—*The New York Medical Journal.*

Is There a "Concussion of the Spine?"—Dr. P. C. Knapp, of Boston, in a comprehensive paper on the nervous affections following injury (*The Boston Medical ana Surgical Journal*), arrives at the following conclusions: 1. Concussion of the spine, in the strict sense of the term, although probable, is still a matter of doubt. 2. Muscular strain, spinal irritation, and peripheral neuritis are not uncommon complications. 3. Injury may give rise, not only to gross mechanical lesions of the central nervous system, with symptoms coming on soon after the accident, but also to typical chronic degenerative processes of insidious onset. 4. Injury may also give rise to various functional affections of the nervous system, including psychoses, hysteria, and neurasthenia. 5. Hemianæsthesia is not pathognomonic of hysteria, but is found in other conditions. 6. Psychical disturbances—anxiety, hypochondriasis, depression, emotional disturbance, and lack of power of application—may exist alone or in conjunction with other affections. 7. The neurasthenic state is often produced by injury, but true hysteria is rare. 8. Both the hysterical and the neurasthenic states may be superimposed upon organic disease, obscuring the diagnosis. 9. There is a fairly typical symptom-complex, with psychical disturbances, paræsthesia, anæsthesia, slow and feeble movements, exaggerated reflexes, etc., which is not uncommon, and is probably due to organic disease. 10. The prognosis of these conditions is grave. Improvement is not uncommon, but complete recovery is rare.

Internal Electrical Treatment of Gastric Dilatation.—The cases of dilatation of the stomach to which direct electrical treatment is appropriate, according to Dr. Baraduc, are those only which are functional and dependent chiefly on atony of the solar plexus. In these he finds direct faradization not difficult to manage. One terminal of terra cotta is laid on the epigastrium, and the other of copper, in the form of a short stem, is passed into the stomach in the tube of a stomach-pump, and not allowed to come into contact with the gastric walls, by being kept some two inches above the tip of the tube. Before introducing the tube some mineral water is given to fill the stomach; and after the electric action has been begun and gently increased, the contraction of the stomach is generally clearly felt by the patient, and the results made manifest by some slight reflux of the contained water up the tube of the stomach-pump. The machine should be kept at work for five or ten minutes, and the tube then withdrawn. The rest of the treatment should consist in rest for the stomach, with some external friction with camphorated oil, a spare nitrogenous diet, with a little milk only as fluid. The points of improvement which generally follow are these: 1. There is complete disappearance of the aching pain in the back and the epigastrium. 2. Manifest contraction of the stomach can be determined, so that its lower border rises some two inches or more, and lies above the umbilicus. This second result is best obtained when the coils are of thick wire, but that is more irritating when the stomach is very sensitive. The pain, on the other hand, is best quieted by the action of coils of thin wire. 3. With the reduction of pain and contraction the thirst diminishes, and the quantity of urine passed increases to the normal. This may result from the increased absorptive power of the alimentary tract, and possibly also from the electrical stimulation of the renal ganglia. External faradization (Erb) or external application of a frequently interrupted continuous current (Dujardin-Beaumetz, Bardet), are methods which are far less efficient in those cases in which dilatation has gone far.—*The Practitioner.*

Bacteriology of Snow.—While the bacteriology of ice and hailstones has been studied with considerable success by Drs. Fränkel, Bischoff, Mitchell Prudden, Pumpley, Hills, Stoben, A. V. Poehl, Bordone-Ufreduzzi, Bujwid, etc., that of snow has been up to the present almost wholly neglected. Even in Russia the subject has been touched only in a cursory way by Professor A. V. Poehl, of St. Petersburg, in the *Vratch.* In it he points out: 1, that snow always contains viable microbes liquefying gelatine; 2, that, when snow falls, the first portions invariably contain greater numbers of bacteria than the subsequent ones (for example, 8,324 per 1 cubic centimetre of snow-water, against 3,380 several hours later); 3, that, when snow lies on the ground, the superficial layers become richer in microbes (for example, 780 just after the fall, against 962 about three hours later). The fact is of interest from a sanitary point of view, as Dr. Poehl's researches furnish an additional proof that exposure of microbes to low temperatures does not destroy their vitality; at least, in certain species of micro-organisms. In

many countries, such as Russia or Sweden, snow forms, so to speak, a natural ground or soil during several months of the year, receiving excrementitious matter and every possible kind of refuse and filth. In spring, when the snow melts, it is imbibed by the soil, carrying with it all the polluting matters referred to. Hence an interesting question arises: Are such microbes as happen to be present in these matters in any way changed by their contact with snow, or not? This point can be determined only by further bacterioscopic researches. A contribution to the subject has just been published by Dr. F. G. Ianovsky, of Kiev, who has examined bacterioscopically, under Professor K. G. Tritshel's guidance, a February snow in its purest state, collected both immediately and from one to three days after its fall. This observer has found: 1. That even when collected during its fall, snow is invariably found to contain living bacteria in considerable numbers, varying from 34 to 463 per 1 cubic centimetre of snow-water. 2. That their number does not decrease from exposure of snow to low temperatures (—16° C.) for several days. 3. That the following three species of microbes are met with constantly in great numbers: *a*, a large diplococcus composed of ovoid cocci, endowed with energetic motion, and characterized by its rapidly liquefying jelly; the test-tube culture on the third day, forming greenish colonies along the track of the needle, assumes the shape of a funnel-like sac with a whitish flocculent deposit, while on the fifth the whole medium becomes liquefied, the precipitate sinking to the bottom; on agar, a pale grayish-white streak is formed at the site of inoculation, on potato a fairly thick white film; *b*, small-sized cocci, often arranged two and two, energetically mobile, and slowly growing on jelly without liquefying the medium, the growth proceeding solely along the track of the needle in the shape of a narrow stripe consisting of non-coalescing minute points of a yellow color, while on the surface the colony is seen as a grayish-white, circular, slightly prominent patch with somewhat fringed edges; on agar, the coccus forms a white streak with sinuous edges; on potato, a gray film with a brownish tint; *c*, very large cocci, liquefying jelly as late as three weeks after inoculation, and growing along the track of the needle in the form of a sharply-defined streak of a beautiful pink color, with a slightly elevated pink circular patch or "cap" on the surface; on agar the microbe forms a freely-spreading white film with a rosy tint; on potato, a thick, tallow-like, pink coat with sharply-defined fringed contours. 4. That the first two species (*a* and *b*) are also met with commonly in the water of the river Dnieper, which flows through the town, while the peculiar pink micrococcus seems to occur only in snow. 5. That, generally speaking, the microbes liquefying jelly in falling or recently fallen snow are met with invariably in far greater numbers than in snow which has been on the ground for some time; this, in fact, very often contains only such bacteria as do not liquefy gelatine. 6. That the bacteria of snow originate partly from aqueous vapors which are transformed into snow; partly and chiefly from the air, that is, they are carried away by the snow-flakes on their passage through the atmosphere.—*The British Medical Journal.*

THE MORTALITY OF PNEUMONIA.—Dr. Osler states that hospital statistics do not warrant the assertion that there has been any marked increase in the mortality from pneumonia of late years, as asserted by some, although the census returns of the United States favor the latter statement. But, as Dr. Billings points out, the comparison with preceding years is inaccurate, since the data were very imperfect and unreliable. At the Pennsylvania Hospital, with a total of 704 cases since 1845, the mortality has been 29.1 per cent., a rate sometimes much exceeded, as in 1875 to 1877, when it was 39.2 per cent., and sometimes quite as much lessened, as in 1845–47, when it was only 16 per cent. In the Boston City Hospital for thirteen years the mortality was also 29.1 per cent.

Dr. Osler shows that in private practice the rate is lower than in hospitals, and points out that the increase of pauper populations in large cities is doubtless responsible in some measure for this diversity. Dr. Hartshorne's statement that the "mortality of pneumonia to-day is, under similar circumstances, more than twice as great as it was forty years ago," is not thus borne out; and Dr. Osler shows that in many cases pneumonia is absolutely uninfluenced by treatment. Yet those cases which do call for treatment are precisely those in which our methods are most futile.

Post-mortem records show how seldom a simple pneumonia, apart from chronic disease of other organs, is a cause of death, but Dr. Osler thinks that it may be useful to divide the fatal cases into three groups: 1. Those in which the death has resulted from such complications as gangrene, meningitis, and ulcerative endocarditis—conditions at present beyond our art to remedy. 2. Cases in which death has resulted from mechanical causes—overdistention and paralysis of the right heart. 3. The large group in which death has been due to failure of the general powers under the influence of the high fever, or of the specific poison, or of both combined.—*University Medical Magazine.*

A SIMPLE METHOD OF SECURING THE LINGUAL ARTERY DURING THE OPERATION OF EXCISION OF THE TONGUE WITH THE SCISSORS.—At a late meeting of the Medical Society of London (*The British Medical Journal*, February 16, 1889), Mr. F. Bowreman Jessett read a paper describing his method of tying the lingual artery in excision of the tongue. He said that in some cases of excision of the tongue with scissors the hemorrhage was often very severe and even alarming. Moreover, in many of the cases that died after this operation, the fatal result was due to the fact that a quantity of blood found its way into the air-passages, and septic pneumonia followed. If this were so, it was obvious that it was all-important to prevent hemorrhage as much as possible during the operation. Again, in removing the tongue with scissors, if the artery was not seized directly it was divided it often retracted, and the bleeding point was with difficulty seen and secured. He had had opportunities of putting the method into practice, and had found it easy and effectual. The operation was only applicable when the disease was limited to the tongue itself, and when the floor of the mouth was free. The tongue being drawn well out of the mouth, the frænum and mucous membrane of the floor of the mouth around the half, or whole of the tongue if the entire organ was to be removed, was divided in the ordinary way with scissors slightly curved upon the flat. The tongue next being drawn well forward and upward, a few fibres of the genio-hyoglossus muscles were divided and torn through deeply with the finger. An ordinary aneurism needle, threaded with No. 4 Chinese silk, was thrust deeply down between the two genio-hyoglossus muscles, the point being directed downward and backward until it was opposite the second molar tooth; the point was then turned outward and brought out of the incision previously made through the mucous membrane, unthreaded and withdrawn. The ligature was next tied firmly and as deeply as possible. A pair of clamp forceps, curved and somewhat larger than those in ordinary use, were passed down and made to catch the tissues on the distal side of the ligature, to prevent the possibility of the ligature being snipped as the tongue was being removed. If it was desired to remove the whole tongue, the same manœuvre was carried out, and the artery on the other side secured. The surgeon then could snip out the organ at leisure, with practically no hemorrhage.

ACCORDING to M. Moulé, domestic fowls are frequently the subjects of tuberculosis, the disease often involving the abdominal organs. *Paté de foie gras* is sometimes almost a pure culture of tubercle bacilli.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE PREVENTION OF PHTHISIS.

ALTHOUGH phthisis is no longer regarded as a malady with a necessarily fatal prognosis, its mortality remains a deplorably high one. It is quite consonant with modern ideas of prophylaxis and sanitation to search for practicable means of preventing the further spread of this destroyer of mankind, rather than to do battle only for the army of those already doomed.

This aspect of the subject was prominently brought forward at a recent meeting of the London Epidemiological Society, in a communication made by Dr. J. E. Squire. The author held that a review of the conditions on which phthisis depends shows that (*The Lancet*) some of the most essential come well within the scope of preventive medicine. The discovery of the bacillus tuberculosis allows us to place phthisis in close relation to the class of infectious diseases toward the control of which preventive medicine has already done so much; and experiments have abundantly proved that tubercular disease can be communicated from affected animals to the healthy. That consumption can be communicated from person to person has long been a matter of popular belief, and cases were referred to which seem to prove that such is actually the fact. The dependence of tuberculosis upon the infective bacillus has been shown by numerous experiments. Phthisis, then, depends primarily upon the reception into the body of an infective particle or micro-organism; but a lowered vitality of the tissues places them in a more favorable condition for the development of the bacillus, and thus constitutes in the individual a predisposition to the disease.

Dr. Squire further stated that the bacillus may enter the body: 1. By inoculation through a cut or scratch. 2. By means of the genito-urinary mucous membrane. 3. By the product of conception, and by direct hereditary transmission. 4. By the mucous membrane of the alimentary canal. 5. By the mucous membrane of the respiratory tract, and by the air-cells of the lungs. The possibility of infection through the alimentary tract assumes importance from the prevalence of tuberculosis in animals which are used as food, and from the experimental proof of the infectiousness of the milk of tuberculous cows. The present state of knowledge on the subject points very strongly to the necessity for careful inspection of cattle kept for dairy purposes, and for precautions in using the milk, and possibly also the flesh, of diseased animals.

It was also pointed out that since infection through the respiratory system is more potent, and probably more frequent, than by any other means, and as the risk of infection is intensified by close contact and by the crowding together of sick and healthy, the necessity for free ventilation is apparent, and becomes more so when the predisposing causes are considered. The latter were considered under these headings: 1. Hereditary predisposition. 2. Influence of air and sunlight. 3. Age and sex. 4. Effect of certain occupations. 5. Influence of locality and habitation, which includes the consideration of climate and temperature, altitude, nature of the soil, density of population, and the condition of dwelling-houses, both as regards their construction and the overcrowding of the inmates. 6. Influence of certain diseases, local and general.

In-door and sedentary occupations, as well as those in which much dust is inhaled, are known to influence largely the prevalence of phthisis. Much of this among the persons following such occupations is preventable. Here, again, the basis of all preventable measures is found in efficient ventilation. The home-workers—*i.e.*, among tailors—are more difficult to deal with than the factory hands; but public work-rooms, in which men could find convenience for their work, might lessen the evils of the present state of things.

With regard to climate, its influence on the causation of phthisis is probably infinitesimal as compared with the effect of density of population. Overcrowding is of two kinds: The aggregation of buildings on a confined area, with insufficient open space around and between houses, and the crowding together of persons within the houses.

The author thinks that laws should be enforced regulating the width of streets, the amount of open space around houses, the minimum height of rooms and size of windows; and efficient inspection of new houses should be carried out before they are allowed to be occupied. Tenement-houses might be licensed to hold a certain number of inmates, and be liable to inspection. As many diseases which produce a general debility thereby predispose to tuberculosis, general sanitary and hygienic measures framed for the control of these tend to diminish the amount of phthisis in a community, and seeing that insufficiency of food, of fresh air, and of exercise, continued anxiety and mental depression, and dissipation must be included among the predisposing causes, the philanthropist may assist the sanitarian in the fight against this widespread disease.

Finally, Dr. Squire believes that the fundamental principles which must form the basis of any successful attempts to diminish the prevalence of phthisis are (1) to provide a sufficiency of fresh air in and around dwellings and work-places, and (2) to endeavor to improve the resisting power of the individual by physical training during the period of growth and development, and by exercise and recreation alternating with the work of maturer age. As the effects of phthisis in the individual are not confined to a single generation, but are handed down by hereditary transmission from parent to child, any cause which tends to increase tubercular disease among the adult members of a population must be regarded as tending to produce a progressive deterioration of race. It is, therefore, to the interest of the community to allow no time to be lost in

commencing a systematic attack against the preventable causes of phthisis.

Dr. Squire states his conclusions rather broadly, and his recommendations are lacking in detailed directions for the prevention of the spread of phthisis as it now thrives. A painstaking disinfection of all suspected matters is certainly not to be overlooked, and will, in time, accomplish much good. Of course all measures of intelligent sanitation tend to diminish preventable diseases, and if phthisis is to be regarded in this light it cannot escape its share of suppression. *A priori*, there is apparently no reason why man should not eventually remain the victor in the great struggle between animal and plant life. But before the sanitary millennium arrives, many a poor victim will be put to rest, beaten in the battle of human protoplasm against microbic supremacy.

SKIN-GRAFTING ON CANCEROUS ULCERS.

NOT the least of the many evils attendant upon ulcerating malignant growths which are too extensive for removal by the knife is the foul-smelling discharge which sickens the patient and destroys his already failing appetite, thereby hastening the fatal termination. Despite the free use of astringents and antiseptics the discharge often continues, and even a thorough scraping and cauterization of the surface afford, in most cases, but partial relief.

In order to remedy this evil, Dr. Kraske, of Freiburg, has had recourse to skin-transplantation and skin-grafting with, in several instances, notable success. He reports in the *Münchener medicinische Wochenschrift* for January 1, 1889, a case of epithelioma of the ear, which had involved the skin above, below, and behind the concha, and had perforated the skull in one place. After thoroughly scraping the surface of the ulcer he brought over a flap of skin from the back of the head, covering with it the greater portion of the cancerous surface. The flap united by first intention, and the remaining uncovered part healed by granulation. Another case was one of carcinoma of the breast, in which the neighboring skin was involved to such an extent as to render an operation useless. For the same reason it was impossible to secure a flap of healthy integument with which to cover the ulcerated surface. So, after cutting away as much as possible of the cancerous tissue, by means of a knife curved on the flat, he covered over the freshened surface with numerous skin-grafts taken from the arm of the patient. These pieces all adhered, and soon the ulcer had entirely healed, the "cancer apertus" being thereby converted into the much more endurable "cancer occultus," and the patient having obtained a short period, at least, of relief from her most troublesome symptoms.

THE MYCOLOGY OF THE FEMALE ORGANS OF GENERATION IN HEALTH.

A SYSTEMATIC investigation has been recently conducted by Dr. G. Winter (*Zeitschrift für Geburtshülfe und Gynäkologie*) in order to determine the nature of the micro-organisms that are normally found in the sexual organs of healthy women. The author states that the Fallopian tubes in health contain no microbes of any kind, and this also applies to the cavity of the uterus. In about one-half of the cases examined, the region of the internal os showed the presence of various microbes. The cervical canal is almost invariably the seat of numerous organisms, and it is a noteworthy fact that their number rapidly increases in the condition of pregnancy. In the vagina in healthy women various microbes are a constant occurrence.

Dr. Winter has also found that there is a decided preponderance of staphylococci over other varieties of germs in the genital organs of women. He assumes that they are identical with the pathogenous cocci, but admits that his inoculation experiments were not conclusive. The explanation given of this apparent inconsistency is plausible enough; normally these microbes vegetate in a condition of lessened virulence. But if putrescible material or necrotic tissues supplant the healthy structures their original virulence is fanned into activity. The practical inference is seen at a glance; and it may be stated that most gynecologists are already practising the strict antisepsis which these observations would place in the light of an absolute necessity rather than an optional procedure.

STRYCHNINE AS AN ANTIDOTE IN NARCOTIC POISONING.

THE cause of death in poisoning due to narcotic drugs is quite generally supposed to be a paralysis of the respiratory centre. Dr. Gibson, writing in *The Practitioner*, says that "it appears difficult to account for the fact that strychnine, the most powerful stimulant to that centre which we possess, should not be recommended as part of the routine treatment for all narcotic poisons. Atropine at present is allowed to hold this position, but there is a stage in opium-poisoning at which the use of this drug is fraught with danger, and a patient may pass away in a condition of profound narcosis in which the action of atropine preponderates over that of the original poison."

In the cases of narcotic poisoning which have come under his own personal notice during the last three years, strychnine has been used hypodermically when there has been any irregularity or interruption of the breathing which appeared to threaten a failure of the respiratory centre. The effect of the drug was immediately shown by the increased rate, more regular rhythm, and greater depth of the respirations. And even in cases where breathing had ceased, it again commenced after the administration of strychnine.

After some general advice regarding the treatment of narcotic poisoning the author continues:

"Keeping the patient in the horizontal position, the respiration is to be carefully watched, and if there should be the least sign of irregularity, or shallowness, or inequality in the breathing, one-hundredth or one-fiftieth of a grain, according to the age of the patient, of sulphate of strychnine should be administered subcutaneously, and may be repeated, at intervals of an hour, two or three times. If, in spite of the strychnine the respiration becomes very feeble or ceases entirely, artificial respiration must be commenced promptly. The most convenient method to employ is that of Sylvester; and it should be persisted in until, on the one hand, the respiration is carried on by natural means, or, on the other, the heart has for half an hour ceased to beat."

Finally, Dr. Gibson points out that although narcotic poisoning appears to constitute the special field of use-

fulness for strychnine, impending death from respiratory failure in general anæsthesia may likewise be at times promptly averted by the subcutaneous employment of this drug.

News of the Week.

THE CONGRESS OF THE GERMAN AND VIENNESE ANTHROPOLOGICAL SOCIETIES will be held in Vienna from August 5th to 10th. A pre-historic exhibition will at the same time be opened in the Vienna Museum of Natural History.

STATE MEDICAL SOCIETY OF TENNESSEE.—This Society will meet in annual session at Nashville, April 30th, and continue in session three days.

PENNSYLVANIA STATE MEDICAL SOCIETY.—The fortieth annual meeting of the Medical Society of the State of Pennsylvania will be held in Pittsburg on Tuesday, Wednesday, Thursday, and Friday, June 4, 5, 6, and 7, 1889, commencing on Tuesday, June 4th, at 9 A.M.

NATIONAL ASSOCIATION OF RAILWAY SURGEONS.—The annual meeting of the National Association of Railway Surgeons will be held at St. Louis, Mo., on Thursday and Friday, May 2 and 3, 1889. Dr. W. B. Outten, of St. Louis, is the Chairman of the Committee of Arrangements.

THE CAUCASIAN MEDICAL SOCIETY of Tiflis celebrated the twenty-fifth anniversary of its foundation on April 12th. The record of the Society during the quarter of a century of its existence has been a good one, many valuable contributions to medical literature having first been presented at its meetings. Dr. A. Grigoryeff is the present secretary of the Society.

THE HEALTH DEPARTMENT AND THE QUESTION OF CONTAGIOUSNESS OF TUBERCULOSIS.—Resolved, that Drs. T. M. Prudden, H. M. Biggs, and H. P. Loomis, the pathologists of this Department, be, and are hereby requested to formulate a brief and comprehensive statement regarding the contagiousness of tuberculosis in man, stating therein the evidence of the same, and recommending in the briefest possible manner practicable, the simplest means of protection from its influence.

SECOND INTERNATIONAL CLIMATOLOGICAL CONGRESS.—From the French Ministry of Commerce and Industry invitations are being issued to assist at the second session of the Hydrological and Climatological International Congress. The first session, or congress, met at Biarritz in October, 1886, and at the time we published a short notice of the proceedings. The second session will be of more importance. It will be held at the Paris Universal Exhibition, and under direct Government patronage. The sittings will last from the 3d to the 10th of October next, and the delegates will have free admission to the Exhibition when the congress meets in the building. All members are charged a fee of twenty francs to defray the cost of publishing a full report of the proceedings. There will be three sections: (1) hydropathic section, (2) scientific and medical section, and (3) climatological section. Each has seven subjects for discussion, and printed papers will be issued previously to the meeting of the congress, so as to form a basis of discussion. The committee organizing the congress has selected M. E. Renou, director of the St. Maur Meteorological Observatory and vice-president of the Meteorological Society of France, as its president. Dr. Danjoy, president of the Medical Hydrological Society of Paris, is vice-president of the committee. Dr. F. de Rauce is secretary-general, and will supply all information to correspondents addressing him at 53 Avenue Montaigne, Paris.

DR. PRINCE A. MORROW, of this city, who has spent several weeks in Mexico and the Sandwich Islands in making personal observations of leprosy, to serve as the basis of a report before the Paris International Congress of Dermatology and Syphilography, which meets in August, has returned to resume his practice.

THE UNIVERSITY MEDICAL COLLEGE OF KANSAS CITY is the name of a newly organized medical college.

MEDICAL COLLEGE COMMENCEMENTS.—Degrees have been conferred as follows: Rush Medical College, 137; Chicago College of Physicians and Surgeons, 50; Jefferson Medical College, 212; Missouri Medical College, 82; St. Louis College of Physicians and Surgeons, 54; Western Reserve, Cleveland, O., 43; Pittsburg, Pa., 36; Atlanta Medical College, 43; Southern Medical College, 35; Indiana Medical College, 27; Toledo Medical College, 8; Albany Medical College, 20.

THE BILL TO ESTABLISH A STATE BOARD OF HEALTH IN FLORIDA has become a law.

AN INTERNATIONAL CONGRESS OF THERAPEUTICS AND MATERIA MEDICA.—In connection with the Paris Exposition of 1889, an International Congress of Therapeutics and Materia Medica will sit at the Hôtel des Sociétés Savantes, No. 28 Rue Serpente, from August 1st to 5th. All physicians, pharmacists, and veterinarians who register and pay the fee of ten francs will be considered as members. The Committee of Organization is composed of MM. Moutard-Martin, Dujardin-Beaumetz, Constantin Paul, P. G. Bardet, Labbé, and R. Blondel. Communications should be sent to Dr. Bardet, adjunct secretary-general of the Committee, No. 119 *bis* Rue Notre-Dame-des-Champs, Paris. Titles of papers to be read should be communicated to Dr. Bardet before May 15th. Each subscriber will be entitled to a copy of the volume of "Transactions."

DR. E. L. KEYES has resigned the chair of Genito-urinary and Skin Diseases at Bellevue Medical College, and is succeeded by Dr. Samuel Alexander, of the class of 1882.

DR. EDWARD PAYSON POND, of this city, who a week ago was appointed a vaccinator, died on April 3d, of malarial fever and complications. Dr. Pond had served several terms as vaccinator and summer corps inspector in the service of the Health Department, and was highly esteemed.

DR. VON LAUER died in Berlin April 9th. He was the physician of the late Emperor William of Germany.

MICHAEL EUGENE CHEVREUL, the well-known chemist, whose hundredth birthday was celebrated last year in Paris, died on April 9th. He was born in 1788, and enjoyed excellent bodily and mental health up to a short time before his death.

DEATH OF DR. J. H. KIDDER.—Washington sustains a severe loss, both scientifically and socially, in the death of Dr. J. H. Kidder, which took place unexpectedly on April 8th. Dr. Kidder was aged fifty years. He had been until six years ago a naval Surgeon, but had done much excellent work in natural history, and had been connected with the United States Fish Commission and the Smithsonian Institution. At the time of his death he was Director of the International Exchanges at the Smithsonian Institution.

DEATH OF DR. DUANE B. SIMMONS.—Word has come of the death, at Tokio, Japan, on February 19th, of Dr. Duane B. Simmons, a resident of Japan, with brief intermissions, since the opening of that country to foreign intercourse. He was born at Milan, Dutchess County, N. Y., August 13, 1832. He went out to Japan as medical missionary with the first mission sent out by the Dutch Reformed Church, in May, 1859. After a few months' service he made a friendly separation from the mission and devoted himself to the general practice of his profession among the foreign and native population of Yokohama. He returned to the United States in 1865, and after two years spent in study here and in Europe, went back to Japan. Soon after came the Restoration of 1868, and he became government medical director and instructor, and organized the first hospital service.

MR. JOHN BRIGHT'S MEDICAL AND SANITARY VIEWS.—The *British Medical Journal* says of the late Mr. Bright: "It must be confessed, however, that his attachment to the most extreme doctrines concerning the freedom of trade sometimes blinded him to the necessity of imposing restrictions in the interests of the health of the workpeople, or of the public health. He was, in fact, more often an antagonist of sanitary legislation than one of its promoters; he did not approve of giving protection to the medical profession in its official relations, and he especially objected to the compulsory clauses of the Vaccination Acts. He was also an opponent of some of the provisions of the various Factory Acts and Labor Regulation Bills. That antagonism was due to an honest endeavor to prevent injustice to the manufacturer as well as hardship to the factory hands. His ideas upon such subjects were governed by his attachment to the principles of free trade."

PHILADELPHIA POLYCLINIC.—There has been great activity of late in the Philadelphia Polyclinic. New Chairs of Diseases of the Mind and Nervous System, and of Obstetrics and Diseases of Children, have been established, Drs. S. Weir Mitchell and Edward P. Davis having been elected to the respective professorships. Dr. Mitchell's service at the Infirmary for Nervous Diseases and Dr. Davis' Maternity Wards at the Philadelphia Hospital are thus added to the other clinical and hospital facilities. Dr. B. Alex Randall has been elected Professor of Diseases of the Ear, in place of Dr. Burnett, resigned. Professor Randall has the Ophthalmic and Aural Clinics of the Children's and Episcopal Hospitals. The hospital accommodations of the present building being insufficient, a very large lot about four blocks from the present location has been purchased, and work on a new building is being pushed. The State Legislature has recommended a grant of $20,000 from the Charities' Fund to aid in the erection of the new hospital, and subscriptions from individuals to the same amount are being solicited, about one-half of which has been secured. Several new departments of instruction have been added under charge of professors of existing chairs; notably the Department of Massage (Professors Mills and Wilson), the Special Ophthalmological Course (Professors Harlan and Jackson), and the Diet Kitchen (Professor S. Solis-Cohen).

DR. EDWARD T. BRUEN, Assistant Professor of Physical Diagnosis in the University of Pennsylvania, died of pneumonia last Sunday, after a brief illness. He was born in 1851, and graduated in medicine at the University of Pennsylvania in 1873. He was visiting physician to the Philadelphia and German Hospitals, and the author of a favorably known work on the "Physical Diagnosis of the Heart and Lungs," as well as of numerous contributions to our periodical literature. He was an earnest student, a close clinical observer, and a skilful practitioner, and his death is a loss to his profession and to the community in which he lived.

CONVENTION FOR REVISING THE PHARMACOPŒIA.—Dr. Robert Amory, President of the Convention of 1880, calls upon the several incorporated medical societies, incorporated medical colleges, incorporated colleges of pharmacy, and incorporated pharmaceutical societies throughout the United States of America, the American Medical Association, and the American Pharmaceutical Association, to elect a number of delegates, not exceeding *three*, and upon the Surgeon-General of the Army, Surgeon-General of the Navy, and the Surgeon-General of the Marine Hospital Service to appoint, each, not exceeding *three* medical officers, to attend a General Convention for the Revision and Publication of the Pharmacopœia, to assemble in Washington, on Wednesday, May 7, 1890, at noon. The several bodies, as well as the Medical Departments of the Army, Navy, and Marine Hospital Service, are requested to submit the Pharmacopœia to a careful revision, and to transmit the result of their labors to the Committee of Revision at least three months before the meeting of the General Convention. The several medical and pharmaceutical bodies are requested to transmit to the President of the Convention of 1880, the names and residences of their respective delegates, as soon as they shall have been appointed; a list of these delegates will be published, for the information of the medical public, in the newspapers and medical journals in the month of March, 1890. If any body other than those admitted in 1880 shall desire a representation in the Convention of 1890, it is suggested that the proof of incorporation, signed by the Secretary of State of the State which shall have issued the charter, or by properly qualified public officials of the United States, be presented with the credentials of the delegation. A blank form of certificate of appointment of delegates will be sent upon application by letter to Dr. Robert Amory, care of Dr. Edwin H. Brigham, 19 Boylston Place, Boston, Mass.

A CHAIR OF BALNEOLOGY.—The University of Vienna has admitted balneology as one of the recognized subjects of instruction, and has made Dr. Clar, of Graz, a privatedocent in balneology.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, March 1, 1889.

FRANCIS P. KINNICUTT, M.D., PRESIDENT, IN THE CHAIR.

THE PRESIDENT presented a male patient, aged forty, suffering from

SPLENIC LEUCÆMIA.

There was a very imperfect history of exposure to malarial influences. The patient had enjoyed good health until April, 1888, when he began to suffer from the usual symptoms of anæmia. In June of the same year he noticed that his abdomen was slightly swollen. From this date the swelling had gradually increased, and he had suffered from progressive discomfort, weakness, breathlessness, palpitation, and from fatigue on slight exertion.

On admission to St. Luke's Hospital he complained of the above symptoms, and on examination the spleen was found to be enormously enlarged, occupying the whole of the left hypochondrium, crossing the median line at the level of the umbilicus, filling the pelvic cavity, its lower border being felt just above the symphysis and easily palpated by the finger in the rectum. The shape of the normal spleen was perfectly preserved, the enlargement being very symmetrical; the usual indentations of the anterior border were well marked. The liver was also greatly enlarged, its lower border reaching a point below a line drawn through the umbilicus. There was no enlargement of any of the superficial glands; the tonsils and pharynx were free from leucæmic disease. The detection of any enlarged mesenteric glands was rendered impossible through the presence of the splenic and hepatic tumors. There was marked sensitiveness over the lower third of the sternum, but no apparent swelling or softening.

An examination of the blood showed the presence of 2,987,500 red blood-disks per cubic millimetre, and a ratio of white to red cells of one to a little less than four. The hæmoglobin percentage was forty-five. The red disks presented no striking changes, with the exception of a few well-marked nucleated red corpuscles, such as occur in the fœtus and in the red marrow of the adult. There were occasional microcytes and megalocytes. The colorless corpuscles presented various forms, viz.: (*a*) Cells of normal size with several nuclei and granular protoplasm; (*b*) large polynucleated cells, resembling marrow-cells; (*c*) very large mononucleated forms. Erlich's method of staining showed a great number of leucocytes reacting with eiorsin. In normal blood very few occur.

Charcot's crystals were not observed.

During the period the patient had been under observation there had been no elevation of temperature. During the entire course of the disease there had been an absence of hemorrhages. The urine contained albumin and hyaline and granular casts. The tenderness over the sternum, in the absence of swelling or softening, could not be considered as a positive indication of any change in the bone-marrow. The patient had come to New York in the hope that the removal of the spleen might be thought feasible. The speaker believed, however, that surgical interference was positively contraindicated.

DR. GEORGE L. PEABODY then read the paper of the evening (see p. 399) entitled

CHRONIC INTERMITTENT FEVER OF NON-MALARIAL ORIGIN.

DR. A. B. BALL said that the patient referred to by Dr. Peabody had been under his care for three months last year, and he had been completely nonplussed to account for the high temperature. The appearance of the girl during the attacks was certainly very extraordinary. While she was under his observation the attacks recurred with considerable regularity, but now this feature of the case had disappeared. These cases of intermittent fever, which were not malarial and could not be traced to any of the more common causes of such a condition, were very puzzling.

DR. BEVERLEY ROBINSON said that there was a patient now in St. Luke's Hospital who seemed to him to be an example of the kind referred to in Dr. Peabody's paper, at least so far as the condition of chronic intermittent fever, non-malarial in its origin, was concerned. The patient, a lad thirteen years of age, had been seen by several members of the Society present. When he came into the speaker's service, in December, 1888, he gave a history of an acute attack, which at first simulated both malarial and typhoid fever. Subsequently, however, it was thought that he had a forming perityphlitic abscess. Later still he was operated on under the supposition that he had pus somewhere in the abdominal cavity, and presumably in the liver. Despite every possible investigation the nature of this boy's ailment was undiscovered. He had, during two months, each successive day in the afternoon, a marked chill, accompanied and followed by a high elevation of temperature. Each morning the patient was again apyretic, although gradually growing weaker and more prostrate. In this instance active medication directed against any possible malarial origin of the disease remained without the slightest appreciable good affect. Finally it was abandoned and operative interference was sought, with, as had been said, an equally negative result. At present, after three months' duration of disease, during the greater portion of which time the lad's condition inspired the greatest anxiety, he seemed to be convalescent, and was in a fair way to recover entirely. What was the occasion, however, of his successive chills and high temperatures remained as much a mystery as before.

DR. GIBNEY referred to a case reported in *The Lancet* in which the temperature rose to an extraordinary height. The case was thought to be hysterical in its nature.

DR. W. M. POLK said that the case was very similar to one he had seen in St. Luke's Hospital about ten years ago. The same patient subsequently came to Bellevue Hospital. This patient's temperature was taken in the axilla, mouth, anus, and vagina, and she was watched very carefully to make sure that no deception was practised. The mercury repeatedly ran up to 110° and 115° F., the highest points that the two thermometers used could register. The temperature was not constantly so high, but varied considerably within short periods of time. The patient was markedly hysterical. He had seen another case of very high temperature. The patient died, but at the autopsy nothing could be found to account for the hyperthermia. Cases of this sort, the speaker said, are certainly very perplexing, and we are unable as yet to explain them.

DR. KINNICUTT said that he could not but suspect that Dr. Peabody's case might prove to be one of pseudo-leucæmia.

Certainly the existence of this disease for so long a period without evidence of involvement of the superficial glands must be very rare; yet Ebstein's case, quoted by Dr. Peabody, was an example in point. Again, the glandular mass found in the abdominal cavity when exploratory laparotomy was performed might be regarded as suspicious. The maintenance of a fair nutrition by the patient did not necessarily militate against the existence of a pseudo-leucæmia. In pernicious anæmia a large amount of adipose tissue, particularly in the abdominal walls, was frequently retained to the last.

DR. A. A. SMITH said that he was once called in great haste to see a patient, and found the temperature 110° F. The temperature was taken several times, but was always the same. He was unable at first to account for it, but further investigation revealed the presence in the bed of

a hot water bag. He asked whether an elevation of temperature was an accompaniment of true hysteria.

Dr. Beverley Robinson presented

AN IMPROVED NASAL INHALER,

the object of which was to facilitate the use of dry vapors in the nasal passages (see p.390). Any volatile liquid substance, such as eucalyptol, creasote, pine-needle oil, etc., might be used with this inhaler. The speaker preferred pine-needle oil because of its efficacy and agreeable odor. The inhaler had been of service in relieving moderate degrees of obstructive disease of the nasal fossæ, due to vascular turgescence, or even to hyperplasia, of the pituitary membrane covering the turbinated bodies and septum.

Dr. Robinson then made a few remarks in regard to

THE USE OF DRY VAPORS IN THE NOSE.

It had been his conviction for many years that douches of any kind were injurious when employed in the treatment of hypertrophic rhinitis, and he believed the same was true, in a less degree, of all the forms of sprays in ordinary use. He had, however, had most satisfactory evidences of the utility of dry vapors, judiciously inhaled at proper intervals and during a sufficient length of time. He had found them efficacious in subduing irritation and in promoting the resorption of tissue, provided the disease were neither too pronounced nor of too long standing. In any case they could do no harm, and they often obviated the necessity of a painful operative procedure. He had never found that the use of these dry vapors aggravated a previous uncomfortable condition, as that of cocaine and other substances employed as sprays not infrequently did. The vapors could be employed by any practitioner, no matter how great or how little was his acquaintance with rhinology. He believed also that the otologists would find such a principle of medication of great advantage in the treatment of various forms of middle-ear disease.

The President reported two cases of

LEAD-POISONING

occurring from an unusual source. The first patient was admitted to St. Luke's Hospital suffering from lead colic and "wrist-drop." He had been employed as a florist, and on investigation by Dr. Vaughan, the house-physician, it was found he had been in the habit of biting off the ends of the tin-foil used as wrappers for hand-bouquets. The tin-foil used for this purpose contained as much as eighty per cent. of lead. There was no history of other sources of lead-poisoning. The second patient was admitted to the hospital suffering from lead colic, and presenting a typical blue gum-line. He had been in the habit, for several weeks, of drinking beer from bottles which, he said, were cleaned by his employer with lead shot.

Dr. R. F. Weir recalled the fact that several cases of lead-poisoning, some years ago, had been traced to the use of a popular brand of chewing tobacco which was wrapped in tin-foil.

Dr. Dana referred to some cases of poisoning which had been traced to the consumption of certain beverages coming in bottles with so-called patent stoppers. He said that he had recently had two Chinese patients in his hospital service, both of whom were suffering from lead-poisoning. He was unable to trace the source of the poisoning.

Dr. Peabody related a case of severe epistaxis for which acetate of lead had been ordered. The remedy produced the desired effect in arresting the hemorrhage, and the patient continued to take it in daily doses of twenty grains for five days. The result was a typical and well-marked case of lead-poisoning.

Dr. A. A. Smith reported a case of lead-poisoning following the use of diluted (1–4) Goulard's solution. The application was discontinued, and in a short time the symptoms of plumbism disappeared.

The Society then adjourned.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Stated Meeting, February 26, 1889.

Clarence C. Rice, M.D., Chairman.

Dr. Wales L. Cary presented

A CASE OF EPITHELIOMA OF THE SOFT PALATE,

with the following history: On February 18th Ferdinand H——, sixty years of age, an Austrian, and by occupation a shoemaker, presented himself for advice concerning a growth of the velum palati, which gave him distress on swallowing. He stated that about one year ago he had an attack of acute inflammation of the fauces, which his attending physician called "a touch of diphtheria;" yet on his own evidence there was no fever and he received no special medication. Soon after this his son noticed a prominent white spot, like a "small split bean," just at the junction of the uvula and the palatine arch. In this there was no pain or tenderness, and no distress or embarrassment on swallowing. In three months it had attained the diameter of five-eighths of an inch, was regular in outline, and still produced no subjective symptoms.

At this stage it was seen by a physician, who removed it with an apparatus which from the patient's account must have been the electro-cautery. During six months he gave it no attention, nor did it cause him any distress; but now, and for three months past, it has occasioned increasing pain on deglutition. Although he has lost much flesh he is still fairly well nourished and strong; no cachectic look has appeared; he denies syphilis, and there are no objective signs of that disease. None of his family have had a similar affliction, and his nine children are all living and healthy. He is not at all intemperate, but up to the beginning of this trouble was an inveterate smoker.

Ten days ago the growth presented a regular outline, very slightly indented, where indistinct lines, slightly contracting, converged toward the centre, the whole mass being elevated above the surrounding tissue perhaps one-tenth of an inch, yet its surface followed the normal conformation of the roof of the mouth. It is semicircular, one inch in diameter, and is convex anteriorly.

At this stage Dr. Rice removed and submitted a small piece to Dr. J. H. Linsley for microscopical examination, who reported as follows: "The tissue examined by me is found to contain epithelium of the squamous variety, and the tumor is undoubtedly epithelioma."

Now the condition will be found materially changed; the elevated distinct outline is merged into the general swelling of the whole of the soft palate. One small spot appears about to break down, being of a yellowish color, and slightly irregular outline. Pain and difficulty in swallowing have increased; there is no interference with the proper palatine function in closing the naso-pharynx, and as yet there is no glandular enlargement.

Dr. Cary then demonstrated the condition found in the patient, and also the use of

A NEW ORAL SPECULUM.

This speculum is made in four different sizes, and consists of variously shaped cylinders so arranged that the struggling of the patient will tend to open the speculum and make the view more distinct.

DISCUSSION ON DR. GERSTER'S PAPER.

Dr. Dillon Brown opened the discussion (*vide* p. 365) on Dr. Gerster's paper by stating that he had been requested by the Chairman to make a few remarks upon the value of intubation in the treatment of tumors of the larynx. In view of the fact that he had operated upon the reader's second case to enable him to dispense with the tracheotomy tube, he thought that it would be more interesting to complete the history of that patient. This man continued to

wear the cannula in the trachea until March 25, 1887, when Dr. Brown performed intubation, with the assistance of Dr. W. H. Wilmer and Dr. Howard Lilienthal. There were also present Dr. H. E. Sanderson, Dr. H. S. Stark, Dr. G. C. Rich, Dr. E. F. Walsh, and Dr. C. E. Giddings, members of the house staff of Mount Sinai Hospital. Two previous attempts had been made without ether and failed, owing to the lower end of the tube engaging in the external opening. He was of a very nervous, irritable temperament, and the tube gave rise at first to excessive irritation, which called for the frequent use of opiates. The irritation was not so great after the first day or two, but it is safe to say that toleration was never fully established in this case. The tube was removed in a week, and there was no return of the dyspnœa. By his presence here to-night it can be seen that intubation has permanently relieved the patient of his tracheal cannula.

In gumma and other forms of syphilitic stenosis, we find the most brilliant field for this method. Without a formidable operation, the dyspnœa is immediately and completely relieved; and, besides the curative effect obtained by the constant pressure of the tube, time is gained for the action of internal medication.

Dr. Brown said that until recently both Dr. O'Dwyer and himself had believed a permanent cure could not be obtained by dilatation in cicatricial stenosis of the larynx; so it was their custom to introduce the tube for twenty-four hours and give the patient freedom from the trouble for a month or two, and then repeat the process. More recently they had become convinced that by constant dilatation, the tube remaining in the larynx permanently, the tendency to contraction of this cicatricial tissue could be permanently overcome. He had under observation at present two cases—one having gone six months, and the other over a year, without interference—both of whom had laryngeal stenosis due to syphilis.

After the members had examined the patient, Dr. Arpad G. Gerster said that although the glands were not yet involved he would not recommend an operation at all in the case, as the disease was so extensive that a complete removal would not be practicable.

Dr. D. H. Goodwillie said he had a case at present having a similar lesion; there were no glandular swellings at present, but the base of the tongue was already considerably indurated. He did not consider any operative procedure called for at present.

The Chairman spoke of the changes in the growth since he last saw the patient. The growth was a perfect circle at first, with an unbroken surface, soft and pulpy to the touch, bleeding very easily when gently touched with a probe, and seeming to be entirely limited to the soft palate, and not involving the pillars of the pharynx at all. Since then it had changed much in color, and had become an ulcerated surface and had involved the pillars of the pharynx.

Dr. J. M. W. Kitchen presented a nasal plug that he had used for several years with much satisfaction. The principal feature of it was a tin core which could be cut out of thin sheet metal at the time it was needed. This core is wound with cotton which can be impregnated with antiseptics or other substances as desired, and then anointed with vaseline and inserted into the nose with dressing forceps. It enables one to apply pressure exactly where it is needed, and the plug will retain its position. He claimed that when the plug was made antiseptic and kept properly cleansed after introduction it would remain for three or four days, in cold weather, without becoming offensive. The following are some of its chiefuses:

1. To prevent adhesion of opposing surfaces.
2. To gain increased space by dilatation, not only after operations but in other instances.
3. To prevent the clogging up of the nose by dried secretions.
4. To secure good intranasal alignment.
5. To repress exuberant granulations, and maintain in apposition flaps of mucous membrane after operations.
6. To make topical applications when required.
7. Occasionally to check hemorrhage, although usually tampons are preferable.
8. To afford protection to and make pressure on ulcers in healing.

Dr. Goodwillie said that where it was necessary to prevent the union of opposing surfaces he found the instrument worked well. He had used celluloid in much the same way as the tin, and liked it rather better. In prolonged treatment, a soft rubber intarnasal tube which will allow air to pass through is more efficient and is a great comfort to the patient.

Dr. Gerster presented two patients who had been operated on for laryngeal growths, together with the specimens removed.

Case I.—The specimen represents the tumor itself removed from the larynx of this patient. On one side it is covered with normal mucous membrane, although shrunken a good deal in the alcohol; on the other side it is ulcerated.

Case II.—The second specimen also represents a tumor of the larynx with a foreign body embedded in it. The foreign body caught in the pharynx or upper part of the œsophagus, and probably perforated into the larynx. It was found embedded in a mass consisting of four or five dense granular bodies. A diffuse perichondritis also existed, causing intense dyspnœa and dysphagia. Tracheotomy and laryngotomy were resorted to, and in extirpating the tumors this foreign body was removed unexpectedly. It is very likely a portion of a butcher's skewer.

In the first case, in addition to the operation for the removal of the tuberculous tumor, a plastic operation was performed in order to close a laryngeal fistula. The patient is suffering from pulmonary disease, and lately this disease has been rather progressive. In the course of the violent coughing a small abscess formed in the lower angle of the external wound, which did not, however, communicate with the larynx.

Dr. Powers asked Dr. Gerster whether the microscopical report showed that the entire tumor had been removed.

Dr. Gerster said he could not answer this affirmatively, because examination as to that point had not been made, as it would have necessitated mutilation of the specimen; he could only say that everything that appeared diseased and somewhat more had been removed.

Dr. J. Mount Bleyer said that he had operated in some hundreds of cases, and that in a case of stenosis due to cicatricial tissue, which he had been dilating for the past four months, he had just been able to remove the tube, and he expected that it would not be necessary to reinsert it. He emphasized Dr. Brown's statement of the advantage of intubation in giving time for internal medication. A trial of this operation should always be given before resorting to other means.

Dr. James E. Nichols asked Dr. Gerster whether the tubercular process appeared secondarily in the larynx, and whether or not he had seen cases where the tuberculosis appeared primarily in the larynx which he considered proper for surgical interference. He had had several cases under his care in which the tubercular process appeared to him to come primarily in the larynx, and they all terminated fatally.

Dr. Gerster replied that he considered all cases of laryngeal tuberculosis to be secondary, and he believed primary tuberculosis of this organ to be extremely rare. The fact that we could not prove the coexistence of tuberculosis of the lung should not be accepted as proof positive that such process did not exist. He had seen it very frequently since the time when we learned to recognize the true nature of many surgical complaints formerly called strumous, and now known to be tubercular. He was in the habit of methodically making a careful examination of the internal organs on taking charge of a new case of local tuberculosis, and had often been unable to

find the slightest trace of lung trouble. He referred to a case of a man of extremely stout build, a wine-merchant, who came to the hospital for tuberculosis of the testicle. He admitted having had syphilis, and, in order to test the question in the usual fashion, large doses of iodide of potassium were administered for some time without any positive result. Dr. Gerster made an exploratory incision, deciding to castrate if the disease proved to be tuberculous.

It was found to be a typically tuberculous testicle, with emulsification of cheesy foci. The patient received ether during anæsthesia, and as a result of the consequent profuse salivation and secretion of mucus a pulmonary catarrh developed, and the man lost much flesh within a fortnight. An examination at this time revealed condensation in the apices of both lungs, which could not be detected while the thick masses of adipose tissue were present previous to the operation. Now the catarrh is perfectly typical of tuberculosis. Previous to an operation we cannot always establish the presence of pulmonary tuberculosis, but if a localized tuberculosis is found somewhere else in the body we may expect that, later on, the pulmonary affection may crop out. He did not doubt that in all these cases we have to deal with cheesy bronchial glands, this being the focus from which, as we all know, tubercular material is distributed throughout the body.

Dr. Kitchen expressed his personal preference for tracheotomy over intubation in laryngeal stenosis. He had seen quite a number of cases of tuberculosis of the larynx, and his treatment aimed simply at securing good nutrition of the tissues surrounding the formation, so as to make them as firm and resisting as possible. In most of these cases he objected to intubation, because it would not allow a continuous observation of the larynx, and might cause some irritation.

The Chairman said that he had had an opportunity of examining the case of tuberculosis of the larynx which formed the basis of the evening's paper a month or more before it came under Dr. Gerster's care. At that time he found a swelling, entirely localized, involving the left arytenoid cartilage and extending slightly forward and laterally toward the pyriform sinus. The tumor pitted on pressure, and when cocaine was applied it was diminished about one-third in size. He thought it due to one of three conditions, viz.: (1) An abscess due to a foreign body; (2) a perichondritis or caries of the cartilage; or (3) a new growth. Tuberculosis did not suggest itself to him at that time, owing to the rarity of such a lesion involving only one cartilage. On the supposition that the swelling was inflammatory, he had scarified it several times with the laryngeal lancet. The inflammatory reaction after this was not remarkable; there was some increased difficulty in deglutition. He had heard nothing about the case until some time after Dr. Gerster's operation.

About six weeks ago another case came to him, and the laryngeal appearances were almost identical with those in the first case. The swelling was much larger, involving the left arytenoid as in the other, and the swelling was so great and the dyspnœa so urgent that the patient was kept at his office until he could be transferred to the hospital. Four-fifths of the laryngeal cavity was occluded by this swelling, and it was expected that tracheotomy would be necessary. Steam and hot compresses were used very carefully, but the swelling seemed to be increased by them.

Ordinarily, in these cases, he considered the use of cocaine not altogether safe on account of the reaction, the original swelling being increased. Happily, in this case, cocaine did exceedingly well, and under continued treatment with a five per cent. solution—followed by an application of iodoform—the swelling steadily decreased, until now the patient breathes quite comfortably. The swelling is so much reduced that the affected arytenoid is nearly the size of the other. The patient says he has always been hoarse, and attributes his severe dyspnœa to catching cold.

Whatever the character of this growth—and it is quite possibly tubercular—it behaves well under treatment. He has general bronchitis and the cachexia of a phthisical subject, but no localized pulmonary deposit has been discovered. In regard to the feasibility of removing such growths by external operation, it depends upon the urgency of the symptoms, dyspnœa, etc. I strongly advocate mild endolaryngeal treatment first, as in my second case cited. A laryngotomy will surely develop pulmonary phthisis if the predisposition is present.

In regard to intubation as a substitute for preliminary tracheotomy, in the case of removal of laryngeal growths, the speaker cited a case in his practice of a young child with multiple papilloma. He had removed the growths but they had speedily returned, and the case was so difficult to operate upon that he had decided to perform thyrotomy. Dr. O'Dwyer was associated with him in the case, and it was the intention to pass O'Dwyer's snare into the larynx and remove the tumors. The child was given chloroform preliminary to a thyrotomy or tracheotomy, but he choked up so rapidly that there was no time for tracheotomy. In this emergency, Dr. O'Dwyer slipped in one of his tubes and waited a moment for the breathing to improve, after which his snare was introduced and the growths removed by scraping each side of the larynx with it. Three times intubation was required on account of the child choking up with blood and the débris of the growths. This case well illustrates the value of intubation as a substitute for tracheotomy under such circumstances.

Dr. Gerster said, in closing the discussion, that his main object in coming before the Section was to bring more prominently before the profession the value of an operation which he believed was not performed as frequently as it ought to be. It was not a question alone of giving the patient air for the time being; there was another problem to be solved, and that was the ultimate cure of the case. As an illustration, he referred to the cases presented that evening. In the case with the foreign body, would intubation or preliminary tracheotomy have done that man any service? It would have given only temporary relief, but the foreign body would have remained where it was. In a case like that of the multiple papilloma—one given up as hopeless by the laryngologists—we could treat it undoubtedly with much more satisfaction if the larynx were wide open and excision were performed, as it can be done with more precision than is possible when done through the oral cavity. He reiterated the statement that the cure of laryngeal tuberculosis had been accomplished, and that the results of treatment of this condition had become brilliant in comparison with those formerly observed. In his case, however, we did not have to deal with diffuse tuberculosis, but had a very rare form of the malady with formation of a large tumor which occluded the larynx, and at the same time produced intense dysphagia, and, as the further development of the case has shown, both symptoms have been removed by the operation. The patient has no tube in his throat and he is perfectly comfortable excepting for the pulmonary trouble. If the operation has only helped to make this man temporarily comfortable, and has saved him from the horrible and prolonged suffering due to dyspnœa and inanition which usually precedes the death of such patients, it has accomplished a good deal.

He felt much indebted to Dr. Brown for some details in the history of his case after it had been transferred to the service of his colleague. He denied, however, that dilatation by the use of O'Dwyer's tube had cured the case, as Dr. Brown had confidently claimed, for he believed it was accomplished by the expectoration of those bony particles which had been exhibited. Had these been removed before, the cure would have been effected without the introduction of the tube, or the reopening of the trachea by tracheotomy. He did not wish to be understood as not appreciating the value of these tubes, for his faith in this brilliant American method of treatment had

been amply proved by his declining during the past three years to perform tracheotomy for croup in children.

We are not to treat this question from the stand-point of tuberculosis of the larynx in general, but we are to deal with a tuberculous tumor of the larynx which is causing dysphagia and dyspnœa.

SECTION IN SURGERY.

Stated Meeting, February 11, 1889.

ROBERT ABBE, M.D., CHAIRMAN.

DIVISION OF THE FLEXOR TENDONS AND ULNAR NERVE AT THE WRIST.

DR. CHARLES A. POWERS presented a young man who, two and a half years ago, suffered a severe lacerated wound at the wrist, severing the flexor carpi radialis, the flexor carpi ulnaris, the palmaris longus, and the ulnar nerve. The wound was sutured by a physician who afterward brought the patient to the hospital, and said he had neglected to suture the tendons and nerve. Two days after the injury Dr. Powers saw the patient, and brought together the ends of the tendons and also of the nerve. At that time there was complete anæsthesia of the portion of the hand supplied by the ulnar nerve, and also loss of motion. Deep union resulted, although superficial union did not. Six days after the nerve was sutured the patient complained of great hyperæsthesia in the corresponding parts, which gradually passed away. Sensation in the parts had now become normal. Motion, however, had not returned in the interossei; he could abduct and adduct the fingers only very slightly. It was the rule that sensation in such cases returned much sooner than motion. Dr. Powers called attention to the great necessity of obtaining primary union in wounds at the wrist-joint, for if the wound healed by granulation the tendons became bound and the functional result was poor. Flexion in this patient had became about normal, but he was still unable to make full extension. Persistent use and electricity had brought about the result.

DR. AGRAMONTE showed the results of a wound which he had sustained in the right thumb many years ago from a bullet. All the structures except a portion of the integument were divided. The army surgeons advised amputation, but at his request applied a splint, and union took place. No sutures were used. By persistent use he had regained very nearly normal function. He had also sustained a division of the extensor tendon of one of the fingers by a sabre-wound, and in that case also the hand was simply put on a splint, and normal function returned. The speaker emphasized the importance of beginning motion in the parts as soon as the wound commenced to heal.

THE CHAIRMAN remarked that the result was likely to be better in division of the extensor than of the flexor tendons, their webbing allowing of less retraction.

DR. POWERS remarked on the importance of obtaining primary union, from which he had much better results.

REPRODUCTION OF THE ENTIRE PATELLA AFTER NECROSIS AND REMOVAL BY OPERATION—FUNCTION OF THE JOINT FULLY RESTORED.

DR. V. P. GIBNEY read the paper and presented the patient, a boy, who at the time of injuring the knee by a fall was seven years of age. Pain and swelling followed, and eight days after the injury a physician opened an abscess at the knee in the prepatellar region. A drainage-tube was inserted, and two weeks later Dr. Gibney saw the patient. There was then much discharge of pus, the parts were infiltrated, and the patella was movable over a limited area. The drainage-tube was not removed; a posterior splint was employed, and the case was treated as one of traumatic suppurative periostitis. A few days later he explored the parts after removing the drainage-tube. The probe touched bare patella. April 5th, the boy was anæsthetized, the patella turned out, the cavity washed with corrosive-sublimate solution, a counter-opening was made, a drainage-tube passed through, antiseptic dressing applied, the knee immobilized by plaster of Paris, and the boy kept abed three weeks. Convalescence was uneventful. In July the function of this, the right knee, was nearly as perfect as that of the left. The patella was now as large as that on the left side.

Dr. Gibney had reported a case of reformation of the patella after removal in a boy whose trouble began with acute articular rheumatism in 1877. The functional result, however, was not that obtained in the other case. It impressed the necessity for prompt surgical interference before the suppurative process extended to the joint. Removal of a part of the patella, and even of the entire bone, was not very rare, but the results in the patient shown were unique.

THE CHAIRMAN remarked that the condition described by Dr. Gibney seemed analogous to that of acute subperiosteal abscess with exfoliation in long bones, with reproduction of bone. The periosteum being raised from the bone by pus, the bone dropped out, and was replaced by new bone developing from the periosteum.

DR. SHERMAN, of San Francisco, said the late James R. Wood had a case of necrosis of the patella, removal of the bone and reproduction, but without restoration of function in the joint. The specimen was in the Wood Museum of Bellevue Hospital.

TUMOR OF THE CHEEK; QUESTION OF DIAGNOSIS.

DR. ROBERT T. MORRIS presented the specimen, a tumor, mostly solid, which had developed in the integument in front of the lobe of one ear, after an attack of scarlet fever, in a man. The parotid and deeper tissues were not involved.

The Microscopist pronounced the tumor malignant, but was unable to classify it as one of typical epithelioma.

Dr. Morris presented a second specimen from a case of doubtful diagnosis, being that of a patient who entered Dr. McBurney's service at St. Luke's in January, 1887, with apparently a tumor of the left lobe of the liver. Dr. McBurney made an incision an inch and a half long over the swelling, put in a trocar, drew off a quantity of pus, and introduced a drainage-tube. In April the discharge had increased, and in July the walls of the cavity were scraped with a sharp spoon. Dr. Morris saw the patient in July, 1888. He then had a fistula below the margin of the rib on the right side, discharging pus, and leading into a large cavity. He made a long opening into the abdomen near the median line, introduced the entire hand, and found a fibrous mass as large as one's fist attached to the lower border of the liver and to the omentum and intestines. Not being able to remove the fibrous mass entire, he opened it and readily peeled out a pyogenic sac which was lined with thin, calcareous plates, resembling the scales of the garfish. Inside were concretions the size of a robin's egg. The fistulous tract did not heal; another pyogenic sac formed, lined with calcareous matter.

THE CHAIRMAN said that in the intervals of Dr. McBurney's service at the hospital he saw this patient, and thoroughly scraped out the pyogenic membrane, but it refilled with the calcareous plates. He thought that originally it was a case of abscess of the liver.

RESECTION OF THE KNEE-JOINT; ORGANIZATION OF THE BLOOD-CLOT.

DR. A. M. PHELPS read the paper, and exhibited diagrams illustrating the methods which he had pursued in twenty-one cases of excision of the knee. A few years ago he had adopted the method recommended by Schede, of securing organization of the blood-clot after excision.

The histories of two of the typical cases were given in detail. The first was a case of ostitis of the tibia in a girl, which went on to invade the knee-joint. The limb became flexed at a right angle, the disease continued active, and he performed excision. After cutting the head of the femur and of the tibia away as far as possible with-

out entering the shaft, he found the abscess extended still deeper, and required scraping until but a shell of the head of the tibia and of the lower end of the femur remained. The bones were then brought carefully together, wired, the Esmarch bandage removed, the cavity allowed to fill with clot, and after three weeks, when the dressing was first removed, union both of bone and soft parts was found to have taken place; the union between the bones was evidently fibrous at that date. The second case related was similar.

To obtain a satisfactory result from organization of the blood-clot, it was necessary to observe rigid antisepsis. The Esmarch bandage prevented hemorrhage during the operation. Do not apply rubber gauze, which tissue was most commonly placed over the cavity, but use Lister's protective; over this apply antiseptic gauze, then absorbent cotton, then plaster of Paris to fix the joint, and afterward swing the limb. Bichloride was used, but the cavity should be entirely free from this antiseptic before the final dressing. In twelve of the twenty-one cases there was firm bone-union; in six there was slight motion, and consequently fibrous union; in one there was much motion, necessitating a posterior splint; two patients were still in the hospital, the sinus extending into the thigh, although primary bone-union had been obtained at the joint. The average time of confinement after the operation was four weeks, while usually union took place in two or three weeks. In nineteen of the cases he employed Fenwick's method, cutting the bone in a curved line. A rubber drain was used, extending only under the skin, not into the bone-cavity. He wired the bones together with silver wire in three cases; with iron wire in eleven, with or without a screw; in six cases no wire was used. The antiseptic was bichloride of mercury, 1 to 2,000 at first, afterward 1 to 5,000. It was absolutely necessary that the limb be kept quiet. The mortality from this operation was much less than from amputation, being less than four per cent. He was unable to tell why rubber tissue was not favorable for the organization of the clot, and in the course of the discussion said that he believed Schede did not claim originality for the method attributed to him.

Dr. R. T. Morris thought the term organization of the clot was improper, for there was annihilation and replacement by other tissue. Lister's protective was by far the best dressing. The epithelial cells developed from the clot were for some time stained with blood-pigment, but after a time the white scar appeared. If carbolic acid were used the blood-clot would break down. Bichloride was best, but none should be left in the wound.

Dr. Ridlon and the author discussed the indications for excision of the knee, and both agreed that it should not be performed in children under eight or ten years of age, as in them there would be too great shortening of the limb later in life. Dr. Phelps said there was usually less than an inch of shortening in cases adapted to the operation, and hardly ever more than two inches.

The Chairman thought this operation did not represent typical organization or replacement of blood-clot, since the clot was enclosed by integument; a typical illustration was seen in cavities of the long bones where the edges of the skin could not be brought together. He could not understand why Lister's protective should be superior to rubber tissue.

Dr. Van Arsdale believed that Schede recommended the use of a large drainage-tube to let out overflow of blood after the cavity filled. The necessity for this would probably be less urgent when the limb was swung, as in Dr. Phelps' cases.

Adjourned.

A New Departure in Surgery.—In a London hospital a woman, sixty-eight years of age, with scirrhous cancer of both breasts had them both removed simultaneously by two surgeons, one on each side of the table. The whole operation lasted forty-five minutes, and after a short time she was discharged well.

Correspondence.

OUR PARIS LETTER.

(From our Own Correspondent.)

ELECTROLYSIS FOR STRICTURE OF URETHRA—OPINIONS PRO AND CON—STRICTURE OF ŒSOPHAGUS TREATED BY ELECTROLYSIS—ELECTRICITY AS A TEST FOR DEATH—CADAVERIC RIGIDITY THE SURE SIGN OF DEATH—THE MODIFICATIONS OF THE BLOOD OF NERVOUS ORIGIN—CEPHALOTRIPSY AND THE CÆSAREAN SECTION.

Paris, March 22, 1889.

With reference to the correspondence in The Medical Record on the treatment of organic urethral stricture by linear electrolysis, the following note may be found interesting. A work on the same subject by Dr. J. A. Fort was recently submitted to the Academy of Medicine, in which the author, who has a large private clinic in Paris, chiefly devoted to diseases of the urinary organs, points out the advantages that this new procedure possesses over internal urethrotomy, dilatation, and divulsion, which are employed for the cure of the stricture of the urethra. Electrolysis is an operation absolutely inoffensive, whereas he considers that urethrotomy is a dangerous operation, often giving rise to fatal accidents. The operation with the electrolyzer is performed without previous dilatation, or any other preparatory treatment. It is performed without causing any pain, and in four or five minutes. Even the narrowest strictures may thus be operated upon at once, and the operation is never attended with hemorrhage nor followed by accidents. It requires no further treatment, and the patient may be allowed to follow his occupations without inconvenience. Relapses are extremely rare. This, however, does not accord with the experience of Dr. Lavaux, who also has a large clinic for diseases of the genito urinary organs. At a recent meeting of the Academy of Medicine the author read a note on the distant results of linear electrolysis in the treatment of urethral stricture. According to his experience, some of the patients were cured for a time only, and more frequently relapses were rapid. Of thirty-five cases operated on with the electrolyzer, the radical and permanent cure has never been obtained. Dr. Lavaux prefers rapid dilatation to all the other methods in the treatment of stricture of the urethra.

At the meeting of the Academy of Medicine on the 13th instant, Dr. Dujardin-Beaumetz presented, in the name of M. Fort, a patient affected with stricture of the œsophagus, which M. Fort operated on, assisted by Dr. Brochin, the well-known surgeon, by his procedure of urethral electrolysis. The stricture, which was operated on on the 16th of February, then measured five millimetres in diameter, but when the patient was presented it measured fourteen millimetres. The patient, who arrived from the provinces, and who was dying from inanition, was scarcely able to swallow even a few drops of liquid, but since he submitted to the operation he is able to take all sorts of nourishment. On his arrival in Paris, on the 16th of February, he weighed 114 pounds, he now weighs 123 pounds. This is the first time that linear electrolysis has been applied for the cure of stricture of the œsophagus. The success is considered complete.

A writer in the *Journal de la Santé* considers that the verification of death by the aid of electricity is the only serious method, and the most easy to practise. The most elementary of electric machines suffice for this purpose, and any person can apply it without difficulty. The muscles of the face being the first to lose their contractility (the muscles of the eyelids and of the lips excepted), if, with an apparatus which determines, on the arm of an assistant, a slight contraction, no contraction whatever of the muscles of the face is produced, one might affirm that the person is dead. Should the slightest trace of contractility be observed, the same apparatus should be,

without delay, employed to electrify the region of the heart, and if death is only apparent, one might thus, in restoring the action of the heart and the respiration, restore the subject to life. In this manner one would avoid the sad accidents analogous to such as recently occurred in the provinces. A lady at Coutras was about to be interred, when, at the last moment, it was perceived that she was only asleep.

In connection with this subject I may cite the summary of a long memoir recently addressed to the Academy of Medicine by Dr. Bernard, of Saint Germain-en-Saye, on the signs of death and on precipitate inhumations. The author concludes that the verification of deceased persons is a formality generally neglected by municipalities, particularly by those in the provinces, and that henceforth not only the inhabitants of communes, but also school-children, should be taught the prescriptions relative to burials. According to Dr. Bernard, the only infallible signs of death being cadaveric rigidity and putrefaction, the medical man should only deliver his certificate when he has established the presence of these phenomena. Cadaveric rigidity being liable to occur before death, it is prudent to wait for the first sign of putrefaction, viz.: the greenish coloration of the abdomen.

At a recent meeting of the Société de Biologie, Dr. Féré made some observations on the modifications of the blood of nervous origin. He stated that in a certain number of hemiplegic and hysterical patients he found that the number of red globules were augmented in the vessels corresponding to the anæsthetized or paralyzed limbs. He also found that in these same vessels the quantity of oxyhæmoglobin was less considerable, and that the duration of the reduction of this oxyhæmoglobin at the ungueal surface was longer. These facts are in perfect concordance with those brought to notice by Dr. Malassez and other authors, viz., that the number of red globules diminishes in the dilated vessels and augments in the contracted vessels. At a subsequent meeting, Dr. Féré read a note on the modifications of the blood in epileptics. He examined the blood of a certain number of epileptics before and after the attacks. He found that after the fits the number of hæmatics and of globulins were augmented, and that the red globules were easily altered.

At a recent discussion at the Société de Chirurgie, on the relative merits of cephalotripsy and the Cæsarean operation, Dr. Bouilly related the case of a rickety woman on whom he had performed the Cæsarean operation about a year ago. At a previous pregnancy he had to perform cephalotripsy in the same patient. The subpubic diameter was only six and a quarter centimetres. Dr. Bouilly made an incision in the uterus of sixteen centimetres, and brought into the world a female child of three kilogrammes. The hemorrhage was considerable, but the uterus retracted under the effect of two hypodermic injections of ergotine, and the wound of sixteen centimetres was reduced to eight centimetres. Eight deep sutures, with silver wire placed in the muscular tissue, and eighteen superficial points of suture reunited the peritoneum to the surface of the uterus. With the view of preventing future fecundations Dr. Bouilly put in practice a procedure till then unknown, he tied up the two Fallopian tubes with two ligatures. The patient had not the least febrile reaction, and is now in good health, as is also her child.

The fourth session of the Congrés Français de Chirurgie is to be held from October 7 to October 13, 1889, at Paris, under the Presidency of Baron Larrey. The following questions are to be discussed: 1. The immediate and distant results of operations practised for local tuberculoses. 2. The surgical treatment of peritonitis. 3. Treatment of aneurisms of the limbs.

The second session of the Congrés International d'Hydrologie et de Climatologie will be held at Paris, from October 3 to October 10, 1889. The members, national and foreign, will be required to pay a subscription of 20 francs. The committee calls particular attention to the questions above indicated. The greater part of these questions will each be the object of an *exposé* or of a report, which will be published, sent to all the members three months, at least, before the opening of the Congress, and will serve as a starting-point for discussion at the sittings of sections. Other works concerning hydrology and climatology may be submitted to the Congress. Authors are requested to send to the Secretary of the Congress the titles and conclusions of their memoirs at least one month before the opening or the Congress.

THE TREATMENT OF LOCOMOTOR ATAXIA AND OTHER SPINAL DISEASES BY SUSPENSION.

To the Editor of The Medical Record.

Sir: Since the latter part of February, I have been treating a number of cases of locomotor ataxia and of other chronic spinal disorders by suspension, according to the method described by Motchoukowski, and popularized by Professor Charcot.

The treatment has been tried in six cases of locomotor ataxia, and in one of Friedrich's disease, also in paralysis agitans, transverse myelitis, hemiplegia, and sexual neurasthenia, sixteen cases in all. The suspensions were made with a Sayre apparatus; they were given three or four times weekly, beginning with half a minute, and extending to over three minutes.

The results so far obtained are these: In one ataxic, sixteen suspensions, there was improvement in subjective feelings in the lower limbs and a steadier gait, no other change. In a second ataxic, ten suspensions, slight improvement. In a third ataxic, who was suffering intensely from lightning pains, no improvement after seven suspensions. In the other ataxics a few suspensions have been made only. The patients say that they feel better and freer in the legs for a day.

In the cases of paralysis agitans one patient felt much better after two suspensions; and it gave him so much relief that he used to hang himself from the top of the door at his home several times daily. He has had eight suspensions.

The second patient, after nine suspensions, thinks his stiffness somewhat improved. The most enthusiastic seeker for suspension is a patient with transverse dorsal myelitis. After thirteen suspensions he really seems much benefited in freedom and strength of movement. The same remark applies to a patient with cerebral hemiplegia who has had nine suspensions. The case of Friederich's disease claims to feel better than he has for a long time.

Of the value of the treatment in functional weakness of the spinal centres I cannot yet speak.

The original description of the effects of this method of treatment was given by Dr. A. Motchoukowski in *Vratsch*, Nos. 17–21, 1883. He reported fifteen cases of locomotor ataxia, in the first stage, treated by suspension; thirteen were improved, showing less pain, parasthenia, and increase of muscular strength, but no cure was pretended.

Dr. Motchoukowski also tried the treatment in cases of lateral sclerosis, multiple sclerosis, and diffuse myelitis, without success.

He describes also some experiments which were made to determine the mode of action of the treatment. On suspending a cadaver he found a lengthening of the body of 6 ctm., a lengthening of the spine, between the second cervical and fourth lumbar vertebra, of 2½ ctm. He noted the increased arterial tension, increased rapidity of pulse and respiration in suspending living persons, and was inclined to explain the improvement in his cases by the greater activity of the circulation induced during suspension.

I have noticed, as would be expected, exaggerated reflexes (in those who haven't ataxia) during suspension. The circulation in the arms is impeded, and the pulse often can not be felt at the wrist.

Dr. Motchoukowski suspended his patients for ten minutes, three or four times weekly. This, it seems to me, is not always necessary or safe. Orthopædic surgeons have learned that adults are liable to faint after long suspensions.

Suspension does not seem to act so well upon very tall and heavy persons. It may cause for a day or two a slight pain in the small of the back, which soon disappears.

The number of suspensions necessary must vary very much with different cases. Half a dozen or a dozen accomplish all that can be accomplished in some cases.

Suspension may do actual harm, and its application and dosage require some care.

The method of treatment of tabes by suspension is not an irrational one. It gives a slight stretching to the nerves, and gives an impulse to a better circulation in the cord. It is usually harmless and it is easy of application. It is applicable chiefly in the first stage of tabes. I have seen enough of it to feel assured that it is a method of treatment inferior in importance to others in our possession. It is a measure of minor and occasional value.

I have now made over one hundred and twenty-five suspensions in sixteen cases.

Dr. R. Saundby has reported several cases in which he has used suspension with moderate success only.

M. Abodie reports the best results in cases not typically atoxic.

My own experience is corroborated by others, therefore, who place a less value on the method than is attributed to it by Charcot.

I believe from some experiments already made, that better results, as far as some symptoms go, may be had by partial suspension by the heels.

I am under obligations to Dr. William P. Wilkin for the care and attention in carrying out the details of the treatment.

CHARLES L. DANA, M.D.

50 WEST FORTY-SIXTH STREET.
April 9, 1889.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 31 to April 6, 1889.

ALDEN, CHARLES H., Colonel and Surgeon. Detailed as member of Army Medical Board to meet in New York City May 1, 1889. Par. 5, S. O. 74, A. G. O., March 30, 1889.

MCELDERNY, HENRY, Major and Surgeon. Detailed as member of Army Medical Board to meet in New York City May 1, 1889. Par. 5, S. O. 74, A. G. O., March 30, 1889.

MATTHEWS, WASHINGTON, Captain and Assistant Surgeon. Detailed as member of Army Medical Board to meet in New York City May 1, 1889. Par. 5, S. O. 74, A. G. O., March 30, 1889.

MERRILL, JAMES C., Captain and Assistant Surgeon. Detailed as member of Army Medical Board to meet in New York City May 1, 1889. Par. 5, S. O. 74, A. G. O., March 30, 1889.

GIBSON, JOSEPH R., Major and Surgeon. By direction of the Secretary of War, relieved from duty at Fort Lyon, Col., and ordered to Fort Sheridan, Ill. Par. 11, S. O. 77, A. G. O., Washington, April 3, 1889.

APPEL, A. H., Captain and Assistant Surgeon. By direction of the Secretary of War, relieved from duty at Fort Sheridan, Ill., and ordered to duty at Fort D. A. Russell, Wyo. Par. 11, S. O. 77, A. G. O., Washington, April 3, 1889.

JOHNSON, R. W., Assistant Surgeon. Reports departure for Whipple Barracks, Ariz. Terr., March 25, 1889.

TORNEY, GEORGE H., Captain and Assistant Surgeon. By direction of the Secretary of War, relieved from duty at Fort Monroe, Va., and ordered for duty to Fort Brown, Tex. Par. 11, S. O. 77, A. G. O., Washington, April 3, 1889.

ROBINSON, SAMUEL Q., Captain and Assistant Surgeon. By direction of the Secretary of War, relieved from duty at Fort Brown, Tex., and ordered to Fort Hamilton, New York, for duty. Par. 11, S. O. 77, A. G. O., Washington, April 3, 1889.

BALL, R. R., Assistant Surgeon. Ordered to Fort Riley, Kan., for duty. S. O. 36, Headquarters Department of the Missouri.

BLACK, CHARLES S., Captain and Assistant Surgeon. By direction of the Secretary of War, granted leave of absence for six months, to take effect after the arrival at Fort Sidney, Neb., of Acting Assistant Surgeon Robert P. Finley. Par. 14, S. O. 78, A. G. O., Washington, April 4, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending April 6, 1889.

MARSTELLER, E. H., Passed Assistant Surgeon. Ordered to the U. S. S. Adams.

STITT, E. H., of South Carolina. Commissioned Assistant Surgeon.

GATES, M. F., of Pennsylvania. Commissioned Assistant Surgeon.

BOYD, J. C., Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Yorktown.

GATES, M. F., Assistant Surgeon. Ordered to the Navy Yard, Philadelphia.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending April 6, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	10	3
Scarlet fever	408	64
Cerebro-spinal meningitis	9	5
Measles	144	14
Diphtheria	187	49
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

"THERE'S NO HARM DONE."—The following song is said by the *Hospital Gazette* to be popular just now among medical students of Dublin and London. There is a good deal of a moral in the lines:

I extracted the wrong tooth, but there's no harm done;
I like to tell the truth, when there's no harm done.
The patient never knew if I pulled one tooth or two,
And he still has got a few, so there's no harm done.

I once made a patient lame, but there's no harm done,
And he'll never be the same, but there's no harm done.
He thinks it was his fate that he took advice too late,
For a train he's often late, but there's no harm done.

I put out a patient's eye, but there's no harm done;
He thinks it was the fly, so there's no harm done.
In place of Atropin I dropped in Winter Green,
But, of course, it wasn't seen, so there's no harm done

Once I gave too big a dose, but there's no harm done;
I request you'll keep it close, but there's no harm done,
Up the medicine he threw, or shouldn't I look blue,
What I tell you is quite true, and there's no harm done.

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Original Articles.

THE OCCURRENCE AND MECHANISM OF PHYSIOLOGICAL HEART MURMURS (ENDOCARDIAL) IN HEALTHY INDIVIDUALS.[1]

BY MORTON PRINCE, M.D.,

PHYSICIAN FOR NERVOUS DISEASES, BOSTON CITY HOSPITAL.

SUMMARY.—Frequency of these murmurs as determined by study of 77 normal subjects. They are endocardial and functional, not organic. Coexisting cardio-respiratory murmurs. Analysis of concomitant physical phenomena. Increased cardiac action a causative factor. Mechanism of the heart by which the mitral orifice is closed, as determined by recent experiments. Relation between this action and mitral murmurs. Murmurs due to weakness of the mitral sphincter. *Physiological leakage may occur from a normal sphincter being forced by excessive muscular action—these murmurs are of this nature.* Characteristics of these murmurs the same as ordinary regurgitant murmurs. Permanency. Frequency of aortic and pulmonic murmurs. Theory of their mechanism. Alternative hypothesis. Appendix.

For a number of years past I have been in the habit of examining physically all the applicants for positions in the Boston Fire Department. Almost without exception, those seeking these positions are in the prime of life, that is, on an average twenty-five years of age, and, as a rule, are a hardy and muscularly tough-looking class of men. I have been consequently much surprised at the frequency with which heart murmurs have been present at the time of examination. As these men have all the appearance of health, and upon close questioning deny all symptoms in any way suggestive of heart disease, as well as antecedent conditions likely to lead to it, such as rheumatism, I have been at a loss to understand the frequency with which I have been able to detect the presence of a murmur. To be sure, the conditions under which testimony as to the past and present health of these witnesses is given are sufficiently trying to the sternest conscience to make one take all statements *cum grano salis;* but, nevertheless, as will presently appear, heart murmurs are far too frequent to attribute them to disease, even including anæmia or functional weakness.

At first I was in the habit of ascribing these murmurs to the excessive use of tobacco, to which men of the firemen class are, if not universally, at least as a rule, addicted. But this theory I have been obliged to abandon, believing that tobacco plays a secondary part, if any.

In order to determine more accurately the frequency and character of these murmurs, I lately recorded the condition of the heart in a large number of cases, taking them consecutively as they appeared. I have notes in 86 cases in all. In every case the sounds at the apex, over the mitral and tricuspid valves, and at the aortic and pulmonic orifices were carefully examined, as well as the position of the apex-beat.

In many cases, not in all, the sounds over the larger arteries, viz., subclavian and carotids, were examined whether valvular murmurs existed or not. All these cases are tabulated below, and the sounds heard in each region noted. But, while all adventitious sounds over the valves of the heart have been noted in every case, so that if, in any given case, no murmur is recorded, it may be understood to be absent, the same is not true of the sounds heard over the arteries. The frequency of sounds in these situations would appear much greater if they had been noted in every case. Owing to the limited time at my disposal, and as they are not of pathological significance, I did not always examine for them. I should state, however, that they are of very common occurrence in these cases, a fact which, as will presently appear, is of some importance in determining the mechanism of these murmurs.

The whole number of cases recorded is 86; of these there were other indications of organic disease, than the mere presence of a murmur, in 9. Excluding these, we have 77 cases in which the heart was apparently healthy. But of these 77 a systolic murmur could be detected in the mitral area in 25.[1]

Whole number recorded	86
Evidence of organic disease in	9
	77
Systolic "mitral" murmur in	25
No "mitral" murmur in	52

It will be noticed that in the accompanying table (I.) a systolic aortic murmur is frequently recorded, but for the present I wish to confine myself to the mitral murmurs alone. I am conscious of the fact that the frequency of this murmur in these cases is so great that some little scepticism is likely to be aroused regarding the accuracy of the observations. But I can say that no one can be more solicitous on this point than I have been myself. The "personal equation," that unbidden guest that sneaks into our laboratories and clinics, and confounds the senses of the keenest of mortals, is particularly fond of playing pranks with observations of this sort. Everyone who does not wish to deceive himself must admit that what may be a murmur to him may be a normal sound to another; or, given a mind in a state of expectancy, a subjective murmur is readily heard.

To determine whether errors of this kind could have been introduced, I have made comparative tests of my own ear in detecting murmurs with the ears of a number of other gentlemen, but have not found that we have differed regarding the quality of any given heart-sound.

Besides this, Dr. Garland, at my request, has kindly examined with me a number of the cases in my tables, and in every case agreed with me as to the existence or non existence of a murmur. Further than this, although in the habit of examining the hearts of a large number of men weekly under other conditions, I do not find murmurs with any particular frequency elsewhere, nor do many of the murmurs that I do find seem to me to be of the same character as these. These murmurs, I must insist, are in my experience peculiar to the class of men with which I am dealing, that is, men strong, hardy, and in the prime of life, examined under conditions of nervous excitement, without any reason to suspect existing disease. I do not, as I have said, find murmurs of similar character with equal frequency elsewhere, and feel, therefore, additionally justified in believing that my observations are correct, and that the "personal equation" is not here a disturbing factor.

[1] Read at the annual meeting of the Boston Society for Medical Improvement, January 14, 1889.

[1] Cases 10 and 13 are excluded as being questionable.

TABLE I.

No.	Apex sounds.	Aortic orifice.	Pulmonic orifice.	Left auricular region.	Subclavian arteries.	Right carotid artery.	Pulse.	Heart's action.	Cardiac area.	Remarks.
1	Soft, blowing, high-pitched systolic, tr. to left.	Systolic		Systolic				Violent.		
2	Systolic, soft, blowing, tr. to left			Systolic		Harsh systolic.		Violent.		
3					Systolic.					
4		Systolic			Systolic	Slight and temporary.				
5	Soft, faint systolic						72			
6	*Soft systolic, loudest in third and fourth interspace, one inch to left of nipple.*	*Systolic and diastolic.*				*Systolic*	63	*Natural*	*Normal.*	
7	Soft systolic, tr. to left; loud also at fourth rib and third space close to sternum.		Faint systolic.	Faint systolic.		Systolic	75	Forcible.		
8					Right and left systolic.		81	Rather violent.		
9					Right and left subclavian.		69	Natural.		
10	Rough first sound (murmur?) at junction of fifth and sixth ribs with sternum; tr. to right, slightly to left.						90	Rather violent.		
11	Soft systolic; tr. to left: disappeared, then reappeared.				Right systolic.		81	Violent.		
12	Loud, soft systolic, tr. to posterior axillary line; heard behind below left scapula.			Systolic			96	Forcible		Murmur over left auricle traced downward with increasing intensity to apex.
13	First sound at apex impure, systolic.						96	Strong.		
14						Systolic	75	Violent.		
15		Systolic			Left systolic.					
16	Soft systolic				Left	Systolic	93	Violent.		
17							96	Strong		Normal.
18					Left and right.		102	Not violent.		
19							81	Natural		No murmurs.
20						Systolic	90	Forcible, violent?		
21							84	Natural		No murmurs.
22	*Soft systolic; loudest on f. e.; slight on f. i.*			*Soft systolic.*			93	*Violent*	*Enlarged*	*Apex beat in sixth space, inside mammillary line. At a later examination the murmur (apex) had disappeared.*
23					Right and left.	Systolic? temporary.			Natural.	
24	Soft systolic; loudest at fourth space, close to sternum on f. e.						111	Violent.		
25	*Blowing systolic, tr. to left*	*Systolic*				*Systolic*	72	*Markedly irregular.*	*Normal*	*Murmurs unaffected by respiration excepting less loud at f. e.*
26							75	Natural		No murmurs.
27	Momentary systolic on f. e.; f. i. last.				Left		80	Strong.		
28							75	Natural		No murmurs.
29							63	Natural		No murmurs.
30	Soft systolic; f. i. lost; f. e. diminished; m. e. loudest.	Slight rough systolic.					69	Forcible.		
31		Systolic			Left		69	Forcible		Aortic murmurs probably transmitted from subclavian.
32	Soft systolic, tr. to left; f. i. lost; f. e. diminished or lost; m. e. loudest.	Systolic			Left and right.		66	Strong		Aortic murmurs probably transmitted from subclavian.
33							84	Forcible.		
34							63	Natural		No murmurs.
35							78	Strong.		
36	Loud, soft systolic, tr. to left; heard at fourth left space; f. e. loud; f. i. lost; m. e. less strong.		Systolic	Systolic			99+	Forcible.		
37	Soft systolic, tr. to left; f. i. loudest; f. e. lost; m. e. faint.	Faint systolic.				Distinct systolic.	84	Strong		Aortic murmurs probably tr. from carotid
38							84	Strong		No murmurs.
39	Systolic, tr. to left and below left scapula; also a second higher-pitched cardio-respiratory murmur during inspiration.	Systolic			Right and left.	Rough systolic.	114	Violent.		
40	Temporary systolic, also cardio-respiratory.			Not examined.	Not examined.	Not examined.				
1	Faint systolic (no cardio-respiratory).			Not examined.	Not examined.	Not examined.	93	Strong.		
42	*Systolic, tr. to left; heard at back; very loud over fourth rib near sternum; cardio-respiratory murmur.*	*Systolic*		*Not examined*	*Not examined*	*Not examined*	66	*Natural*	*Enlarged*	*Apex in mammillary line.*
43	Systolic, tr. to left; heard at back, and tr. to aortic orifice.	Systolic			Not examined.	Not examined.	99	Violent	Apex close to and inside mammillary line.	
44-47										Normal.
48	Loud systolic, heard at back; tr. to left; present during f. e., f. i., and m. e.; heard also over aortic valves.	Systolic					81	Violent		Nervous.
49	Faint but distinct systolic.						90			
50							60			No murmurs.
51	*Squeaking systolic over mitral area.*		*Rough systolic.*				(?)	(?)	*Enlarged*	*Pulmonic second sound accentuated.*
52	*Systolic and cardio-respiratory.*			*Not examined*	*Not examined*	*Not examined*			*Enlarged.*	
53		*Systolic*		*Not examined*	*Not examined*	*Not examined*				*Organic.*

NOTE.—Tr. = transmitted; f. i. = forced inspiration; f. e. = forced expiration; m. e. = medium expansion. Italics indicate probable organic disease. Cases are not in the order in which they were examined.

TABLE I.—*Continued.*

No.	Apex sounds.	Aortic orifice.	Pulmonic orifice.	Left auricular region.	Subclavian arteries.	Right carotid artery.	Pulse.	Heart's action.	Cardiac area.	Remarks.
54....	*Systolic and heard at back; also cardio-respiratory of different pitch; former tr. to anterior axillary line.*	.....	.....	*Not examined*	*Not examined*	*Not examined*	*93*	*Violent*	*Slight enlargement.*	*Apex can be felt in mammillary line.*
55....	Cardio-respiratory only on full inspiration.	.....	.....	Not examined.	Not examined.	Not examined.				
56–59.	.....	.....	.....	.....	.....	.....	....	.....	.....	Normal.
60....	*Systolic, moderately loud*	*Occasional systolic.*	*Systolic*	.....	.....	*Systolic*	....	.....	*Apex beat in mammillary line.*	
61....	Moderately loud systolic, tr. to left; heard over mitral valve and at apex.	.....	.....	...	.....	Systolic.				
62....	Faint systolic.....	.....	Systolic	.....	Systolic	Systolic.				
63....	Loud systolic, tr. to left	.....	.....	.....	Systolic	Systolic.				
64....	Soft systolic, tr. to left, and from apex to left auricle.	Faint systolic.	Systolic	Systolic	Systolic	Systolic	120	Violent; excited.	Normal.	
65....	.....	.....	....	.....	.....	Systolic	99–102	Not especially violent.		
66....	.....	.....	.....	.....	.....	.....	84	Natural ...	.....	Normal.
67....	.....	.....	.....	.....	... .	Systolic	100	Violent.		
68....	.....	.....	.....	.....	.....	....	105	Fairly strong	.....	No murmurs.
69....	Systolic, which disappeared at end of examination.	.....	.....	.....	.....	.....	69	(?)		
70....	Faint systolic.....	Loud systolic.	Faint systolic.	.....	Systolic	.....	99	(?)		
71–75.	.....	.....	.....	.....	.....	.....	....	....	....	Normal.
76....	Soft systolic, which after one to two minutes disappeared.	.....	.....	.....	.....	....	69	Strong.		
77–86.	.....	.....	.....	.....	.....	....	....	.....	.....	Normal.

NOTE.—Tr. = transmitted; f. i. = forced inspiration; f. e. = forced expiration; m. e. = medium expansion. Italics indicate probable organic disease. Cases are not in the order in which they were examined.

Furthermore, after these observations had been made I mentioned, in a general way, to Dr. McCollom that I met with murmurs with surprising frequency under the above conditions, but did not communicate the exact results; in fact, at that time I had not tabulated my notes. Dr. McCollom kindly offered to note the frequency with which he found these murmurs in his examinations of men for the police. He now tells me that, as a result of his entirely independent observations, he has found "functional mitral regurgitant murmurs" present in twenty-seven out of two hundred men.[1]

He has kindly offered to bring his notes (which I have not yet seen) here to-night.

Although this frequency is not equal to that with which they have been present in my experience, yet it is sufficient to be regarded as confirmatory evidence on the part of an entirely independent observer of the great frequency of these murmurs.

For what discrepancy exists I think I can, in the proper place, offer satisfactory reasons.[2]

The most interesting part of this subject is the mode of production and significance of these unusual heart-sounds. That they are not due to a diseased condition of the heart is apparent from the very frequency with which they occur. It is preposterous to suppose that twenty-five out of every seventy-seven men, with every appearance of health, have heart disease, and that, too, without existing pathological signs; or even that they are suffering from those temporary disturbances of health, such as anæmia, which are known to cause the murmurs ordinarily understood and recognized as functional.

These murmurs, then, must be physiological, not pathological.

CARDIO-RESPIRATORY MURMURS.—A certain number of them undoubtedly may be cardio-respiratory. There are two kinds of cardio-respiratory murmurs; one is due to the forcible expulsion of the air from the lung by the heart striking against it. It will be remembered that the tongue-like expansion of the lung—the lingula pulmonis—overlies the left apex. When the heart is beating vigorously, this portion of the heart is liable to be compressed against the chest-wall. The air is consequently driven out and a systolic murmur is produced. It is soft, blowing in character and resembles the expiratory murmur in pitch and quality. It persists during quiet expiration and inspiration. It is usually loudest when the lung is moderately full of air and during quiet respiration. It generally diminishes in intensity and may disappear when the air is forcibly expelled from the chest. The reasons for this are obvious. This exocardial murmur is often difficult to distinguish from a true endocardial bellows murmur. The points of differentiation are its pitch and quality, its behavior during inspiration and expiration, and its seat of greatest intensity being not directly over the apex but to the left, in the mammillary line, *i.e.*, over the lung. When another murmur of different pitch is present, the two are easily distinguished. It is difficult to deny that some of the murmurs recorded in the tables as mitral may be of this character, some of them without doubt are,[1] but it is out of the question to suppose that more than a minority can be accounted for on this theory.

The second variety of cardio-respiratory murmurs is due to the suction-action of the heart on the lungs. With each cardiac contraction the bulk of the heart is reduced in size, and a corresponding vacuum produced in the chest. This is compensated for by a corresponding expansion of the lungs—a sort of cardiac respiration, as it were. If the heart's action is strong, it is easy to understand how the in-rushing air, with each systole, would produce a murmur synchronous with the first sound of the heart; but this murmur should resemble in pitch and character the inspiratory sound of the lungs—and this is exactly what is the case. Usually it is a quick, short accentuation of the inspiratory sound, synchronous with the systole of the heart—a sort of jerky, inspiratory sound; but as this re-enforcing, respiratory murmur occurs only with the first sound of the heart and ceases during diastole, it gives the impression of being endocardial, whereas it is really exocardial. At least, such is the most probable explanation. These cardio-respiratory murmurs are usually easily distinguished, and one learns to disregard them almost unconsciously. They occur only during inspiration, and are devoid of the characteristics which we shall find belong to the mitral murmurs above recorded. That they occur only during inspiration is probably due to the fact that the suction power of the heart is not able to act on the lungs when they are retracting during expiration; that is, inspiration and expiration cannot take place at the same time. That they diminish or cease when the breath is held, it seems to me, is due to the fact that under these conditions they fail to be re-enforced by the normal inspiratory sound.[2]

[1] Since published in the Boston Medical and Surgical Journal, January 31, 1889.

[2] See Boston Medical and Surgical Journal, January 31, 1889, p. 109.

[1] See Appendix.

[2] As a rule, these murmurs were neglected and not recorded in these tables.

Rapidity and Force of the Heart's Action.—In a certain number of cases—I am sorry to say, not in all—the pulse-rate and action of the heart were noted. When the latter seemed to be normal it was so classified, or as "natural;" when it seemed to be above the normal it was noted as "strong," forcible," or "violent," according to its apparent strength. The pulse-rate is recorded in 43 cases, as follows:

Over 75 in 29, { souffle[1] in 13, none in 16.

Under 75 in 14, { souffle[1] in 6, none in 8.

It will thus be seen that souffles were not of greater frequency when the pulse-rate was increased than at other times. It is worth noting, as showing the degree of nervous excitement present, that pulse-rates of 90 and upward were not uncommon, even 120 being recorded, and that 29 out of 43 were over 75 shows to what extent nervous excitement existed.

When we come to take into consideration the force of the heart's action, a different state of affairs is met with.

The heart's action is recorded in 42 cases, as follows:

"Strong," "forcible," or "violent," 29, { souffle in 17, none in 12.

"Natural"..... 13, { souffle in 1, none in 12.

Or a mitral murmur was present in fifty-eight per cent. of the cases when the heart's action was above the normal, and in only eight per cent. when the action was "natural."

Taking the converse of this, the same fact is emphasized still more strongly.

Of the whole 25 cases in which a mitral murmur was detected the heart's action was noted in 20, as follows:

20 cases, { action "strong," "forcible," "violent," 19, "natural"..... 1.

In observing the character of the heart's action it was impossible not to be struck with the difference between the strong, vigorous thump in the cases marked "strong," "forcible," and "violent," and the commonplace beat of the average heart. There was as much difference between them as there is between the musculature of an athletic young man of twenty-five and that of an old man of sixty. It was just such an action as might be expected in a vigorous heart working under nervous excitement.

This increased muscular action furnishes the key to the explanation of these murmurs; but to understand this it will be necessary to briefly study the mechanism of the mitral valve.

Mechanism of the Mitral Valve.—The first thing that strikes us on referring to the common text-books on anatomy and physiology is the inexactness and speculative character of our knowledge as therein laid down regarding the closure of the mitral opening—an inexactness which in consequence is naturally shared by most medical men. The conception of the mitral valve usually entertained by practitioners generally, and that described in most of the books, is that the mitral opening, bounded by a ring of fibrous tissue, is of fixed and unvarying diameter, and that the opening is closed by the mitral flaps alone, in one or other of the various ways described in text-books. It is also usually laid down that the base of the heart does not diminish in size during systole.

Foster, in the fourth edition (1880) of his work, for example, states that, "according to Kurschner, the circumference of the base of the ventricle is absolutely increased during systole."[2]

It is owing to what must now, in the light of comparatively recent experiments, be regarded as erroneous notions of this kind, that the meaning of many mitral systolic murmurs have not been understood.

[1] A mitral souffle only is referred to.

[2] In the latest edition of his Physiology, now in the course of publication, Foster has modified his description of the heart's mechanism in accordance with later experiments.

Hesse,[1] by a series of ingeniously devised experiments, has shown that the mechanism of the heart is very different in some important respects from that usually supposed. As these experiments are only beginning to find their way into text-books, and are not generally known, it will be necessary for me to briefly describe them here.

Hesse contrived to obtain casts of the heart during diastole and systole, and, by taking puppies of the same size and weight from the same litter, to obtain hardened hearts of the same size, in both diastole and systole, from which sections could be made. The details of the experiments I will not go into here, but merely give the results of his observations.

The accompanying diagrams (Figs. 1 to 3) are taken from his work, and illustrate the points of importance in this connection.

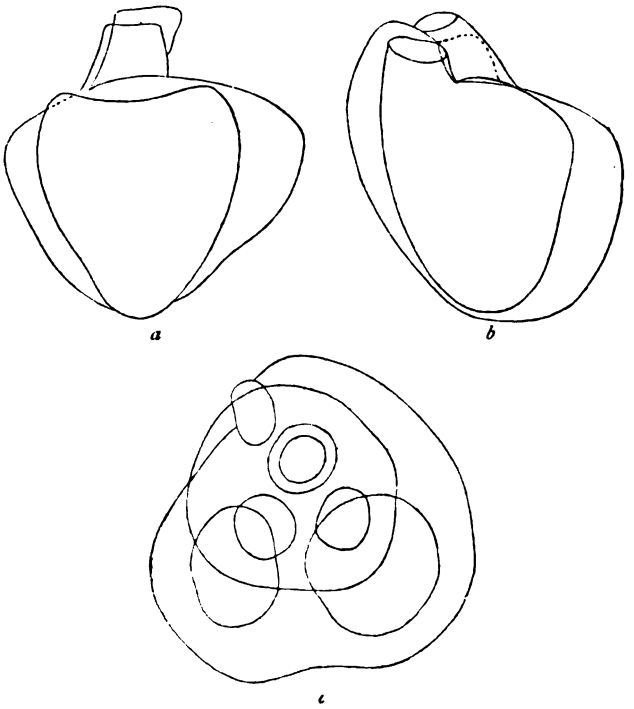


Fig. 1.—Outline of Hearts of Two Puppies of same Size and Weight in Systole and Diastole. *a*, Posterior surface; *b*, left side; *c*, base. The difference in size of auriculo-ventricular openings in systole and diastole is plainly shown in cut. The pulmonic and aortic openings are taken as fixed points.

In the first place, he showed that the area of the base of the heart in the plane of the auriculo-ventricular valves, so far from remaining constant in systole and diastole, is enlarged more than one-third in the latter condition.

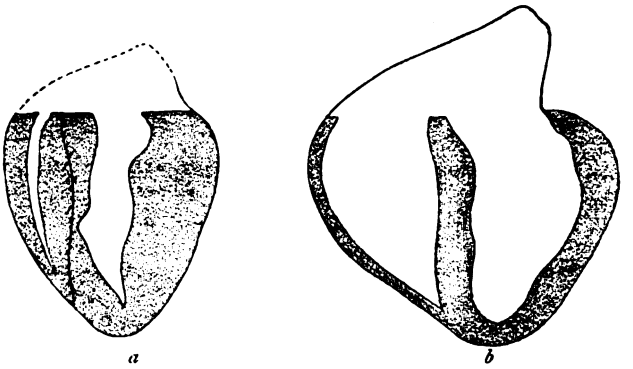


Fig. 2.—Frontal Sections showing Cavities in *a*, Systole; *b*, Diastole. (The perpendicular line drawn through the septum in *a*, was drawn through error of engraver.)

Secondly, the mitral orifice, so far from being of constant size, dilates with the expansion of the base and is constricted during systole.

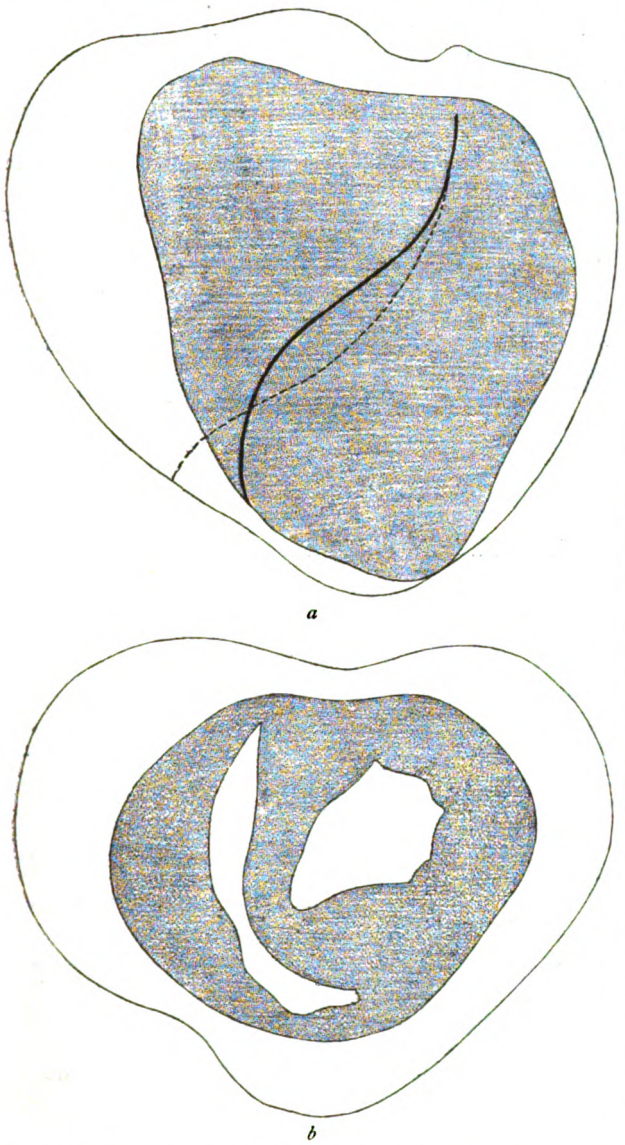
Thirdly, a point of interest, but one with which we are·

[1] Archiv. f. Anat. und Entwickelungsgeschichte, 1880. For an account in English see article by McAlister, British Medical Journal, October 28, 1882.

not directly concerned, is that there is no shortening of the ventricle (left) during systole, as has been claimed.

In other words, during diastole the auriculo-ventricular orifice is too large to be closed by the mitral valve alone, but must be first constricted by the muscular contraction of the base, and that then only the valves suffice to close the opening. The valves may be said to be a size too small for the hole.

The arrangement of the muscular fibres of the heart is calculated to accomplish this action. Although the arrangement of the fibres is, in detail, very complicated, Hesse shows that they may be practically separated into three layers; an outer one of diagonal, a middle one of circular, and an inner of longitudinal fibres (Fig. 4).



[FIG. 3.—Outline of the same Dog's Heart in Systole and Diastole. *a*, Seen from the front; *b*, from the base.

Accordingly, the closure of the mitral orifice is effected by two actions. First, by the sphincter-like action of the circular muscular fibres, and, second, by the apposition of the valve-segments.

The effect of the sphincter-action in narrowing the orifice is very beautifully shown when looking into the aperture of the ventricular opening from the auricle. Owing to the puckering of the circular basal ring to which the valves are attached, these appear to be made up of four or five segments instead of two. A comparison of this drawing from Thompson (Fig. 5), with a similar view in Quain, will show this more clearly. Dr. William G. Thompson has succeeded in obtaining a very beautiful series of instantaneous photographs of the heart in action. Some of these are reproduced here. These photographs seem to correspond with Hesse's casts, and show the same diminution of the area of the base during systole (Figs. 6 and 7).

In the light of these experiments many mitral regurgi-

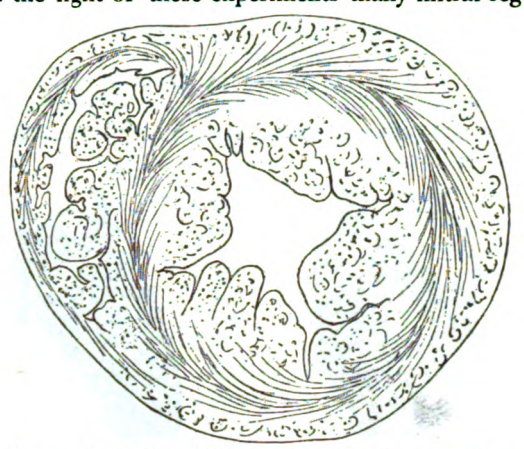


FIG. 4.—Section through Heart, showing Three Layers of Fibres.

tant murmurs assume a new meaning. The murmurs that occur, for example, in the course of acute fevers, of diphtheria, typhoid, and probably also in many cases of acute rheumatism, though once explained by hypothetical changes in the blood, are really regurgitant murmurs caused by weakening of the mitral sphincter. The same

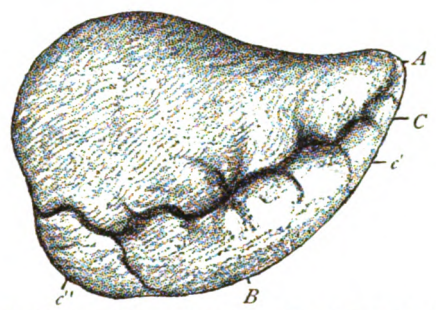


FIG. 5.—Mitral Valve of Bullock, Closed, as seen from Left Auricle, showing Line of Apposition of Cusps and their Uneven Surface. *A*, large cusp ("aortic cusp"), attached near aortic valve; *B*, next largest, or "parietal cusp;" *C*, *c'*, *c''*, lesser cusps filling in the angles between the larger ones.

condition of affairs also probably obtains in chlorosis and that form of general debility brought on by degenerating diseases, like chronic diarrhœa and malaria, and also by continued hardships and wear and tear of life. Mitral regurgitant murmurs are very common under the latter

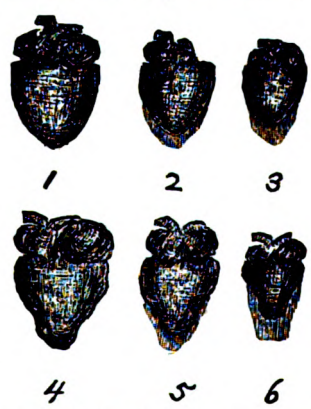


FIG. 6.—Photographs of the Heart in Motion. 1, Normal diastole; 2, auricular systole; 3, ventricular systole. 1, 2, 3 were taken in a half second; 4, 5, 6, same as 1, 2, 3, after injection of toxic dose of strophanthus hispidus. 4, 5, 6, were taken in a half second. The pulse-rate was 74. (Thompson.)

conditions. It is also apparent how a slight degree of dilatation may give rise to regurgitation, what before was not so clear so long as the basal area and the mitral openings were considered constant.

This form of regurgitation may be said to be now fairly well recognized, and has been termed "curable mitral regurgitation" (Balfour).

Now it occurred to me that the converse of this might be true, namely: *Given a normal, healthy sphincter, with excessive pumping action on the part of the heart under strong nervous excitement, and a temporary leakage might occur, from the blood being forced through the sphincter in spite of the action of the latter.*

Under ordinary conditions the sphincter and the valves are sufficient to prevent leakage, but theoretically it is evident that under excessive muscular action the sphincter might be forced.

a *b*

FIG. 7.—Pigeon's Heart in Motion. *a*, Full diastole; *b*, full systole, produced by application of hot salt and water. (Thompson.)

The question before us is, Do the cases here tabulated present evidence to show that this practically occurs? or, put in other words, Is there reason to believe that this is the correct explanation of these cases?

I have already shown that one factor, increased muscular action, is present. Further evidence on this point may be obtained from the arterial murmurs that coexist in many cases, and which are so commonly heard in physical examinations of this kind.

I regret that I did not examine for a record these arterial murmurs in all cases. But, as with many other points, not having any theory in mind when the observations were made, I failed to do so.

Of the twenty five cases, a co-existing arterial murmur is noted in twelve.[1] I say noted, because, as has been said, these murmurs were not always looked for. These arterial murmurs must be regarded as indicative of increased cardiac action. Some years ago I made some observations to determine the frequency and rationale of these murmurs. These notes have been lost, but I remember that they were very common.

A noteworthy case, illustrating the extreme type of this kind of action of the heart, with the murmurs that must be regarded as the effect of it, is Case 64.

Here there existed a soft systolic murmur at apex, transmitted to left and from apex to left auricle; faint aortic systolic; pulmonic systolic; left auricular systolic; subclavian systolic; carotid systolic (faint). Pulse, 120; heart's action "violent, excited."

Case 54 is interesting as showing, it seems to me, an exaggerated condition of this same condition. It is excluded here because there was slight enlargement present. Though the apex-beat to the eye was in the normal position, pulsation could be felt in the mammillary line. I had another opportunity to examine the case a few weeks ago.

A systolic murmur could be heard at apex, transmitted to left as far as anterior axillary line, and heard beneath the left scapula. A cardio respiratory murmur of different pitch, heard during inspiration, was also present. Heart's action violent, pulse 93.

I have since learned that this subject belongs to a neurotic family, and that both he and his brother have previously had some form of neurosis. The regurgitation in this case is probably due to temporary dilatation of the heart, due to relaxation of the muscle, and represents the curable form.

Further evidence in favor of our hypothesis is derived from the character of the murmurs. If they are really regurgitant sounds they should present the character of sounds due to this cause. A study of the records shows they do so.

1. They are heard loudest at the apex.

2. They are transmitted to the left, sometimes as far as the posterior axillary line.

3. Sometimes they are heard in the back beneath the scapula (this was not always looked for).

4. A murmur of similar character is sometimes heard over the region of the left auricle and pulmonic region, and sometimes can be traced upward to this point from apex.

5. They are sometimes heard equally loud at the junction of the fourth rib and sternum on left side, *i.e.*, over the mitral valve.

6. The effect of holding the breath after forced expiration (f. e.), forced inspiration (f. i.), and during mean expansion (m. e.), was observed in seven cases. In only three cases did they disappear under the first of these conditions. Sometimes they sounded louder. As a rule they were diminished by forced inspiration; occasionally increased. As a rule, I should say, taking into account other cases not included here, they were louder during mean expansion.

The bearing of this test lies in the fact that some authorities assert that exocardial murmurs disappear after forced expiration, while endocardial murmurs persist. I am not disposed to lay too much stress on this test.

Finally, the association of these murmurs with murmurs elsewhere is interesting as showing the character of the heart's action as a whole.

TABLE II.—*Mitral Murmurs.*

No. of case.	Heart's action, + or normal.	Aortic.	Pulmonic.	Left Auricle.	Subclavian.	Carotids.
1	+	Ao.		L. a.		
2	+			L. a.		Ca.
5	N.					
7	+		Pu.	L. a.		Ca.
11	+				Subcl.	
12	+			L. a.		
16	+				Subcl.	Ca.
24	+					
30	+	Ao.				
32	+	Ao.			Subcl.	
36	+		Pu.	L. a.		
37	+	Ao.				Ca.
39	+	Ao.			Subcl.	Ca.
40	?					
41	+					
43	+	Ao.				
48	+	Ao.				
49	?					
61	?					Ca.
62	?		Pu.		Subcl.	Ca.
63	?				Subcl.	Ca.
64	+	Ao.	Pu.	L. a.	Subcl.	Ca.
69	?					
70	?	Ao.	Pu.		Subcl.	
76	+					

Summary.—Total, 25 cases. Heart's action increased in every case but one where noted. Aortic murmurs in 9. Pulmonic, or left auricular, or both, in 8. Arterial in 12.

Further light is thrown on the mode by which regurgitation of this kind may be brought about by the experiments of Thompson just referred to, and by some still later experiments of Waller.

The former has shown, by means of photography and the application of different stimulating substances, that the reserve contractile power of the heart is from one-quarter to one-half; that is, that under such stimuli the diminution of the size of the heart may be one-half greater than during normal systole; to which we must add, assuming that normal systole is represented by that obtained under the conditions of physiological experiment, when the heart is exposed.

Waller[2] concludes, from observations on certain electrical phenomena connected with cardiac pulsation, that the ventricular walls do not contract as a whole, but the contraction begins as a peristaltic wave at the apex, progressing upward. If this be so, it is still more easy to

[1] Case 27, in which the mitral murmur was only transitory, is not included; an arterial murmur coexisted.

[2] Balfour, following Naunyn, maintains that the basic murmur heard in chlorosis and other conditions is loudest over the left auricular appendix (that is, an inch and a half to left of sternum in second intercostal space), and is really a mitral regurgitant murmur transmitted to this region through the dilated appendix.

[2] British Medical Journal, October 6, 1888.

understand how a physiological regurgitation might take place, for a powerful peristaltic contraction, beginning at the apex, might easily force blood through the mitral sphincter before the latter had time to act.

Professor H. P. Bowditch, in conversation with me, has suggested that the probability of the ventricles contracting in this way might be inferred from the thinness of the walls at the apex. If the apex did not contract first, it is probable that the wall at this point would not be able to withstand the internal pressure, and rupture would frequently occur.

Regarding the *permanence* of the mitral murmur, I find that in four cases it is noted that they disappeared at the end of the examination. It should be said that I could not systematically examine for this point, but from the general impression produced by my earlier experience as a whole, I suspect that if attention were specially directed toward determining the fact, most of these murmurs would be found to disappear after the heart had quieted down. I can recollect in the past several cases which I had an opportunity to re-examine at different intervals. The murmurs in these cases disappeared.

Aortic and Pulmonic Murmurs.—I have less to say in regard to these. There can be little question that they must be looked upon as due to the violence of the heart's action. It must be a matter of mere luck that the passage of the blood through the aortic and pulmonic orifices is ordinarily soundless. It must be a matter of mere chance that a certain harmony exists between the size of the cardiac chambers, the outlets, and the force of the current, as a result of which no sonorous vibrations sufficient to reach the human ear are ordinarily produced. I say sufficient to reach the human ear, for it is possible that such vibrations of low intensity occur, and, if our ears were keen enough, could be detected. For "sonorous fluid-veins are always generated when the blood-stream passes *with sufficient force* from a part of the circulatory system which is actually or relatively constricted into a part which (in comparison with the part behind it) is actually or relatively dilated." This condition of affairs practically obtains at the aortic and pulmonic orifices. We have a large ventricular cavity, a non-yielding orifice, and a yielding dilating tube, leading from the latter. With every systole the aorta and pulmonary artery expand and become relatively dilated in comparison with the aortic and pulmonic orifices, which are consequently relatively constricted. If the blood-stream passes with *sufficient force*, a murmur must result.

It is practically the same condition of affairs that exists in mitral regurgitation.

One factor stands out prominently in all cases as requisite, namely, a certain intensity of blood-current, and if the passage of the blood through the aortic and pulmonic orifices is ordinarily soundless it must be because the force of the stream is too weak.

I cannot help thinking that, after all, this simple explanation is the correct one for the functional basic murmurs about which so much controversy has been waged, and so much romantic imagination expended.

I give here a table, showing the association of these murmurs with others.

Table III.—*Aortic Murmurs.*

No. of case.	Heart's action.	Mitral.	Pulmonic.	Left auricle.	Subclavian.	Carotid.
1.....	+	Mi.....	.....	L. a.		
4.....	?	.....	.....	.....	Subcl.....	Roughening.
15.....	?	.....	.....	.....	Subcl.	
30.....	+	Mi.				
31.....	+	.....	.....	.....	Subcl.	
32.....	+	Mi.. ...	.....	.....	Subcl.	
37.....	+	Mi.....	.....	.....	.....	Ca.
39.....	+	Mi.....	.....	.....	Subcl.....	Ca.
43.. ...	+	Mi.				
48.....	+	Mi.				
64.....	+	Mi.....	Pu.....	L. a.....	Subcl.....	Ca.
70.....	?	Mi.....	Pu.....	.....	Subcl.	

Summary.—Twelve cases. In every case, where noted, the force of the heart's action was increased. Mitral murmur in 9 cases. Arterial murmur in 8 cases. Mitral or arterial (or both) in every case.

It is proper to state that no inference should be drawn from this table as to the *relative* frequency of these aortic murmurs, as in some cases it must be regarded as doubtful whether the murmur originated at the aortic orifice, even though plainly heard there. In some of the cases it is likely that it was transmitted from the carotid or subclavian. In the time at my disposal it was impossible to determine this accurately.

Table IV.—*Pulmonic and Auricular (Left) Murmurs.**

	Heart's action.	Mitral.	Aortic.	Subclavian.	Carotid.
1, L. a.....	+	Mi.....	Ao.....		
2, L. a.....	+	Mi.....	.....	.....	Ca.
7, Pu. / L. a.	+	Mi.....	.. ..	.....	Ca.
12, L. a.	+	Mi.			
36, Pu. / L. a.	+	Mi.			
62, Pu.....	?	Mi.....	.....	Subcl.....	Ca.
64, Pu. / L. a.	+	Mi.....	Ao.....	Subcl.....	Ca.
70, Pu.....	?	Mi.....	Ao.....	Subcl.	

Summary.—Total, 8 cases. Heart's action increased in every case where noted. Mitral murmur in every case. Aortic murmur in 3 cases. Arterial murmur in 5 cases.

* These two murmurs are tabulated together on account of their proximity and possible unity.

Alternative Hypothesis.—If this be not the correct explanation of these mitral murmurs, the only plausible alternative hypothesis that remains is that they are not endocardial, but exocardial, the cardio-respiratory theory already referred to. These cardio-respiratory murmurs are very easily detected when they have the characteristics already described, namely, when they occur only during inspiration, cease on expiration, and when the breath is held; are of the same pitch as the inspiratory murmur, and appear as jerky accentuations of the same, synchronous with the heart's systole. If the respiratory hypothesis be maintained as explanatory of all the mitral murmurs here described, then I know of no way of differentiating between an endo- and an exo-cardial murmur, for both would have the same characteristics. Again, the respiratory theory will not explain both murmurs in those cases where two could be detected of different pitch, one of which can be proved to be cardio-respiratory, *e.g.*, Cases 39 and 40.

I have thus far refrained from extending my conclusions to other conditions than those under which these observations were made. But I think we shall not transgress the canons of probability if we go further, and apply this explanation to murmurs heard under various other conditions. It is not difficult to understand how almost any disturbance of cardiac muscular action may give rise to regurgitation of a similar character—if the mitral sphincter is temporarily weakened relative to the pumping portion of the heart, or if the latter be increased relatively over the former; or if, through disturbance of nervous energy, a lack of harmony exists in the action of the different parts of the cardiac muscle, then regurgitation may take place. It seems to me that most of the so-called functional murmurs heard during systole at the apex will be found to be due to agencies of this kind. Such murmurs are usually temporary, and probably give rise to the contradictory opinions given by physicians to one and the same patient.

If these observations are correct, and the conclusions well founded, I cannot help thinking that they will prove of practical value, not only in our offices, but in passing upon applicants for life insurance, the civil service, and perhaps college athletics.

Appendix.—Curiously enough, while these studies were being made, Professor Roy and Mr. Adams, in England, were pursuing a somewhat similar line of inquiry, on the experimental side, in the laboratory. Their paper[1] came to my knowledge too late to be incorporated in the text, but as these most interesting experiments throw a great

[1] Failure of the Heart from Overstrain, British Medical Journal, December 15, 1888.

deal of light on the mechanism of the heart action under certain conditions, it will be interesting to briefly refer to them here, especially as they, within certain limits, throw light upon the conclusions here reached from the clinical side. These experimenters undertook a series of experiments on the effect upon the heart of variations in the work which it is called upon to perform in conditions of health and disease. The mechanical work done by the heart is determined by the amount of blood thrown out in a given time and the pressure against which it is thrown. We have then to deal with the effect of changes in these two factors. Changes in the blood-pressure were induced by narrowing the aorta at one or another part of that vessel. The effect of this upon the heart is, first, to increase the intra-ventricular pressure, the pressure having a maximum limit. With fatigue of the heart—produced either by continued slight narrowing, or often repeated great narrowing—this maximum limit gradually falls. Secondly, such narrowing of the aorta produces a very evident distention of both ventricles, which nevertheless go on contracting and expanding in what, to the eye, seems a perfectly normal manner; but examination of the veins shows that (thirdly) regurgitation is taking place through both the mitral and tricuspid valves. Increase in the total quantity of blood in the vascular system also increases the work done by the heart. More blood is expelled, diastolic expansion is greater, and the degree of contraction less. Within physiological limits there is no great harm in such variations in the diastolic expansion of the heart, which are very much greater than is generally supposed. The extent and the efficiency of contraction is increased, although the degree of contraction of the individual muscle-fibres at the end of systole is diminished. Although the conditions under which these experiments were performed were different from those existing in the cases which form the subject of this paper, the facts elicited are to the point so far as they demonstrate the physiological variations that may normally take place in the size of the heart, as well as the physiological regurgitation that may take place in the auricles from the ventricles when the organ is called upon to do increased work. Whether increasing the work done by stimulation of the vagus and accelerans produces the same result, is not stated, but left for a further communication.

The possibility is at once suggested, however, that in the cases recorded in the foregoing tables a slight dilatation may be present as a result of increased heart action. A physiological regurgitation would thus be more easily induced.

Several cases I have seen suggest this. The following is particularly in point. It was that of an applicant whom I rejected one year ago. The mitral murmur was loud and the heart was slightly enlarged, the apex-beat being displaced toward the left. I sent the man to a specialist, who confirmed my opinion of organic disease. A few days ago the man, by chance, returned to me, and I could find nothing abnormal. The only change he had made in his habits was to give up tobacco, of which he was a heavy chewer. He had had no cardiac symptoms. Since this paper was written I have had an opportunity to examine 85 more men, with the above theory in mind, omitting the cases in which organic disease may have been present. In 24 individuals a systolic murmur was present at the apex, but in 10 of these it seemed to me that the murmur might be accounted for as exo-cardiac, that is, cardio-respiratory; so that in 14 cases there was a true endocardiac murmur. In the first 56 subjects I examined the heart first, as was my custom in the earlier series. In the last 29 subjects the heart was examined last, and time given to the applicant to become accustomed to the ordeal. In these last 29 a true endocardiac murmur was heard only three times, and a cardio-respiratory once; while in the preceding 56 subjects an endocardiac (mitral) murmur was heard eleven times.

This shows that the conditions of the examination have much to do with determining the frequency of the murmur.

Dr. McCollom tells me that in a second series of 111 men, he detected a mitral systolic murmur in 18 individuals.

It seemed to me, too, that I was frequently able to detect a slight enlargement, such as might correspond to that following increase of the work done in the above-mentioned experiments. But I will not speak positively in this matter until I have made more precise examinations.

A SUCCESSFUL CASE OF IMMEDIATE RESECTION OF THE INTESTINE FOR GANGRENE.[1]

By ROBERT H. M. DAWBARN, M.D.,

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It gives me pleasure to lay before the gentlemen of this Section of the Academy a case of exceptional interest to us all, that of a recovery after immediate circular enterorrhaphy following excision of a large amount of dead gut, in a case of strangulated femoral hernia in an elderly lady. I shall be unable to be present at the May meeting, otherwise I would accept our Chairman's courteous offer to make this the principal paper at that meeting. To Dr. Powers I am indebted for the privilege of taking his time to-night, and my report, in consideration of the lateness of the hour, shall be as brief as possible.

The history of the case is as follows: I was called to see Mrs. M—— on Saturday evening, March 23d. She is, as her daughters say, "at least fifty-five years of age." She has had a rupture twelve years, for which she has worn a truss. Twenty-four hours before my visit, while sweeping, she was taken with severe pain in the region of the rupture. The truss frequently allowed the gut to descend, and now she could not reduce it. Vomiting immediately set in. Her family physician now attempted taxis, failed, used morphine by needle, and ordered a poultice. The poultice, which the family had applied, and which I saw, was of the thickness, hardness, temperature, and about twice the size of a silver dollar.

Four hours previous to my visit the vomiting, which had persisted and was frequent, became fecal in odor, and about that time, too, hiccough began and was very distressing. The local pain and tenderness continued.

On examination I found a hernia on the left side, about the size of a large fist, painful and tender, very tense, and without impulse on coughing. Gentle taxis failed. Poupart's ligament seemed to pass about to the middle of the tumor, and the parts being quite fat, I was in doubt whether I had to deal with a femoral or an inguinal hernia. The most fixed point of the swelling seemed the lowest, and this inclined me toward the former view, which proved correct. Her general condition was fairly good. The temperature was 100.5° F.; her heart and her kidneys seemed efficient.

I advised immediate operation, to which she agreed. The operation was begun two hours later, at ten o'clock P.M. I was assisted by Drs. F. A. Manning, H. J. Kelly, J. H. Brower Browning, and two of my students, Messrs. Brickner and Van Deusen. I wish at this point to say that I consider the good result largely due to the scrupulous care and attention of the surgeons named.

The entire pubic and inguinal region and both labia majora were shaven and the parts disinfected as usual. In all respects the usual care to secure absolute asepsis was observed, the details of which may well be omitted from this recital. I considered it very important to have a high atmospheric temperature. There was no stove or other heating appliance, nor any thermometer as a guide. I had the windows closed and lit many lamps and candles. The air was kept so warm that everyone present was freely sweating.

An incision was made, in the long axis of the tumor, its entire length. The sac upon being exposed was, of course,

[1] Read before the Surgical Section of the New York Academy of Medicine, April 8, 1889.

opened. I regard a surgeon who to-day reduces a strangulated hernia by operation without first opening the sac and examining the gut, as absolutely without justification. His only possible excuse is the peritoneal superstition, and this is born of dirt. The advantages of opening are too numerous to require mention here.

The moment the sac was opened a considerable mass of omentum protruded, and a small quantity of fluid of offensive odor escaped also. A large loop of the small intestine was found strangulated, almost black in color, and tense with gaseous and semifluid contents. Its peritoneal coat was smooth in most places, but there were a few small ruptures of this coat, possibly due to taxis. As was subsequently discovered, a small ulcer at the point of constriction, of some depth, threatened perforation, and a deep groove in the gut separated the sound from the unsound portion.

The constriction was very great—I cannot imagine it greater. To relieve it, I used, as the safest means that could be employed, the smaller blade of my French-lock blunt-pointed scissors, curved on the flat, and rather dull. This was cautiously passed, the convexity toward the gut, and then the edge being slightly turned toward Gimbernat's ligament, this was divided a sufficient distance to make circulation through the intestinal vessels entirely and easily possible.

Although the gut was not entirely lustreless, and was not sticky, I was convinced that it was dead. Upon pinching the gut sharply (after freeing the constriction) the very dark blood squeezed away by the finger and thumb did not return, even slowly. I determined to give it a chance, however, and nearly twenty minutes were spent awaiting a change in its state, the gut and the entire wound being meanwhile enveloped in soft cloths wrung out of warm bichloride solution, 1 to 10,000. At the end of this time no change whatever was noticed, either in the gut or in the color of the mesenteric vessels nearest it.

Under ordinary circumstances I should now have considered excision and a temporary artificial anus the best of the several means at our disposal.

To leave the gut out for hours, properly protected, or to return it to the abdominal cavity, under control by means of a tape through the mesentery, are measures only justifiable where the surgeon has reason to think intestinal life wavering in the balance; where, for example, pinching the gut shows a very slow return of blood to the pale spot so produced, but still a return. This temporizing exposes the patient to several obvious dangers, but in case of doubt must be selected.

For three reasons I decided in this instance to follow my kelotomy by immediate circular enterorrhaphy: First, my patient was in excellent condition, and could, I thought, under the careful anæsthesia then being conducted, bear a much longer operation. Second, the appearance and feel of the gut, with which I have had many opportunities to familiarize myself, convinced me that it was a part of the jejunum and not the ileum, and hence nutrition with an artificial anus would not be well maintained. Third, the patient's bowel above the strangulation could not contain much fæces, as a thorough movement had occurred a little more than a day previously, and nothing had been retained in the stomach since then. Consequently, great pressure from retained gut-contents would not be brought to bear against my intestinal sutures.

My first step was to ligate off with catgut the masses of omentum present, cut them away, irrigate carefully, and return the stumps to the abdomen. Next, several inches of healthy gut at each end of the dead loop were drawn out of the abdomen. The gut, its mesentery, and the wound were thoroughly irrigated. In order to protect the peritoneal cavity from infection, a long strip of iodoform gauze was packed around the gut in the bottom of the wound as firmly as was thought safe for the vascular supply. Then the mesentery was stitched, with cobbler's sutures of catgut, a distance exactly equal to that of the gut about to be removed, and on a line about two-thirds of an inch from the gut. This suture puckers the mesentery so that it is greatly shortened. Then the gut was cut with scissors, which next divided the mesentery as near to the sutures as seemed safe. Not only the dead bowel, but an inch or more of that which seemed sound was removed from each end, this step being really in the line of safety rather than recklessness. The amount removed in this way measured twelve and two-thirds inches. This I show here, together with a part of the omentum excised. An additional small piece of the bowel was cut away at one end, in order to make absolutely sure of perfect blood-supply from the mesentery, so that a foot and nearly an inch of intestine were lost to the patient. This, accepting as correct the lists of published cases, 115 in number, recently so carefully collected and elaborated by Dr. A. J. McCosh, is the largest amount of gut successfully removed at an immediate operation for strangulation on record in America.

One of the surgeons present now held the intestine firmly, so as to occlude it, about two inches from either end. These two inches were carefully emptied and irrigated, and then the ends approximated. The sutures employed were of catgut and interrupted, two rows being used, a Czerny and a Lembert.

In sewing the mucous and muscular coats especial care was devoted to the intermesenteric margin. This, for ease of work, should be sewn first of all. I placed a mesenteric stitch, not too tight, across the gap above the gut, on each side, to reinforce this weak point. The Lembert sutures, following Sir William MacCormac's wise advice, were so drawn as not to *force* the peritoneal surfaces together, but barely to appose them. I remembered, too, Dr. Wyeth's report of a case of his own, demonstrating that within three and a half hours after the operation the line of contact would be completely buried—hidden—and the sutures protected by a thick layer of fibrinous exudate.

The stitches were placed one-eighth of an inch apart, and were not superimposed, so that a suture was present, of each alternate kind, for each sixteenth of an inch. The needle used was a common, small cambric needle, which had been passed through a flame. After a final irrigation with 1 to 4,000 bichloride, the gut was returned to the abdominal cavity. The hernial sac, following the method of Mitchell Banks, was now dissected clean away, clear to Gimbernat's ligament, the freshly irrigated wound dusted well with iodoform, and rather firmly packed with iodoform gauze, which was carried up as far as the peritoneum, and a stout bichloride dressing applied.

The patient stood the operation remarkably well, there was little shock, the vomiting and hiccough ceased immediately, also the abdominal pain. A hypodermic of morphine with atropine was administered at once. No food whatever was allowed for twenty-four hours, and but little water. Thereafter, hot clam-juice for twenty-four hours, then matzoon, peptonized milk, and Rudisch's sarco-peptones, at the patient's option, for the first week. The bowels moved spontaneously and painlessly the second day. I have since twice moved them freely by a glycerin enema, but usually she has a satisfactory daily movement without medication. The temperature did not go above 101° F. (vaginal), but remained between 100° and 101° F. for five days, after which it became normal. The dressing has been twice changed. The wound is granulating and filling very rapidly. It is now between two and three weeks since the operation, and I can safely say that she is out of danger. At least two gentlemen here to-night have seen her within twenty-four hours, and can testify to her lively appearance.

Now, a few words regarding several points of interest, and I will end my paper. After so thorough and workmanlike and scientific a *résumé* of this topic as that recently presented to the Surgical Society by Dr. McCosh, together with a report of a successful case of his own, very little that you would care to hear remains for me to say. There are, however, some questions which suggest them-

selves, and on which I would especially like the opinion of those much more experienced than myself. First, as to sutures? I used catgut, and catgut has a number of times been used, notably in two recent instances of his own, reported by Dr. Briddon. But, I think, most surgeons advocate boiled silk. My catgut was taken direct from the solution which I always employ of late, and which, I think, keeps the gut aseptic and strong in a very satisfactory way, namely, a saturated solution of washed iodoform in sulphuric ether. I first immerse the commercial gut in ether to remove its fat, and after a few days put it permanently in the iodoform-ether. This is preferable to the ether-alcoholic solution, as the gut is kept equally as strong in the former, and iodoform is but feebly soluble in alcohol (1–80) as compared with ether (1–54). Dr. Nicholas Senn's demonstration, that by the time forty-eight hours have elapsed after the gut is sutured the cementing of the opposed serous surfaces is so great that even severe internal pressure will not part the lips of the wound, gives me confidence that there is no danger that the catgut used will be absorbed too soon.

As to the duration of anæsthesia, it was two and three-fourths hours. The actual suturing of the gut took nearly one and a half hour. This takes more time to do properly, with not a stitch too tight or too loose, too deeply or too superficially placed, than anyone realizes who has not tried it. I have demonstrated this operation now nearly fifty times, upon as many subjects, in my operative surgery classes at the New York Polyclinic, and it is always most tedious. Since speed is a tremendous factor in the problem of success in bowel-work, we shall all heartily welcome any device cutting short the duration of operation and yet giving a perfect result. It may well be that in Abbe's catgut rings (an improvement on Senn's plates, seeming equally safe and always ready at hand) we have the means of saving many lives through point of time. I have not yet had an opportunity to test the question as to the time needed to invert the gut ends, close each with Lembert stitches, point the overlapped ends in opposite directions (as Dr. Abbe has suggested, to get normal peristaltic waves), and opening the two sides apply the rings. I should think that quite a little time might be saved by this method as compared with circular enterorrhaphy. If the surgeon, however, deems it wiser to suture the ends by Czerny previous to inversion and the Lembert, then nothing, it would seem, would be gained. For sewing twice the diameter is equal to sewing two-thirds of the circumference of the gut; and it would probably take no longer, on the average, to put the double line of sutures into the remaining third of the circumference than to make the openings, insert the plates or rings, fasten them, and take the few Lembert stitches recommended for security.

In my case I was bothered a little by the fact that so much intestine was removed that there was quite a noticeable difference in the calibre of the two ends. Beginning at the intermesenteric point, and working round gradually, I had a little wrinkle in the larger end to overcome before completing the circle. In a future case I should avoid this by putting my second stitch just half-way round the circumference, my third and fourth midway between these, and so on. In other words, I should sew it according to the rule in other wounds, always dividing the spaces into halves by our stitches. After doing this completely by the Czerny, the peritoneal stitches could easily be placed.

The great length of gut excised precluded the possibility of taking a V-shaped piece out of the mesentery; and indeed I cannot see the advantage of this in any case. The time spent in suturing the edges of the mesentery is a needless prolongation of the operation, and so, I think, is the suturing of the edges of the mesentery after cutting it between the cobbler's sutures and the gut. It seems best, by way of preventing bleeding, to make these latter stitches before dividing either the gut or mesentery.

Just a word regarding irrigation. This, I think, should be nearly continuous during the sewing, and of simple warm water or salt water, in temperature at least 100° F. If very distinctly warm to the hands, say 105° or 110° F., the additional warmth will only have the soothing effect of a poultice; while, on the other hand, the slightest chilling of the gut would tend toward shock. For the same reason I think the heat of the operating-room, previously mentioned, to be essential in such cases.

In another instance I think I would scratch the peritoneum to be opposed, lightly, with my needle, to hasten agglutination, as recommended by Senn. This I did not think of at the time.

Finally, my good fortune in this instance is, of course, very largely due to the chance that I was called in early, strangulation having lasted but twenty-four hours. It seems evident that if prolonged taxis were avoided and very early operation always urged, there would be found extremely few cases of dead gut, and those few would show a much smaller mortality from excision than is the case at present.

STERILITY: INTRODUCING A NEW INSTRUMENT FOR ITS CURE.

By P. E. OUTERBRIDGE, M.D.,

ASSISTANT SURGEON TO THE WOMAN'S AND NEW YORK CANCER HOSPITALS; ATTENDING GYNECOLOGIST TO THE DEMILT DISPENSARY.

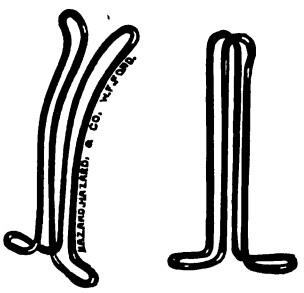
An apology may seem in order for drawing the attention of the reader to a subject which is touched upon in most of the gynecological text-books of the present day, and with which every gynecologist is supposed to be familiar. But at the present time there is a decided tendency to study with care only those things that are entirely new. I am aware that in taking up this topic I shall have to go over some old ground, but I trust, nevertheless, to be able to throw a little light on this rather old and threadbare subject. My connection with two of the largest clinics for diseases of women in this city has brought before me the frequency of the existence of sterility and its unhappy consequences, a condition the amelioration of which must be apparent to all; moreover, I have found it to be the fact that by a large majority of patients at the clinics sterility is often regarded with shame, not unmixed with a feeling of disgrace, ideas quite contrary to those entertained by patients among the better-educated class, in whom superior training has lessened these ancient convictions, for we know that among the old Romans a barren wife was considered a cause for separation. The patients, therefore, who come to consult for this condition often fail to mention the subject directly, in the hope that something may be done to bring about the possibility of conception. It is only, therefore, by close and careful questioning that we elicit from them the real object of their visit. There are so many obstacles to conception that might be present in the same person that in making a diagnosis of sterility in a particular case it often takes not only time but careful examination to ascertain its cause, and frequently it is arrived at only by exclusion. It must be understood that conjugation necessary for conception between the male and female may be imperfect, as I have in several instances had cases of this kind under observation, the trouble being with either the male or female, and sometimes both. Patients themselves will often attach much importance to a lack of participation, or so-called feeling, during coitus, but it is certain that sterility cannot with any justice be attributed to this cause, though many authorities still cite this as one. In cases that give this history some other reason is always found, but it is nevertheless possible that it may be due to some constitutional trouble which impairs the general condition, or from lack of food or exercise the parenchyma of the uterus and appendages is weakened and so rendered incapable of developing and sustaining a healthy ovum; but I believe this to be of rare occurrence. In my opinion the absence of proper conjugal feeling will almost invariably be found to be of local origin, and if diagnosed correctly and treatment be carried out intelligently, at least in seventy per cent. of the cases our efforts to cure will prove successful.

It must be remembered that sterility may exist in the male as well as the female, even though the sexual relation appears normal, and after a careful examination of the female, and no cause can be found for the existing condition, an examination of the male should not be omitted. I will not at present enter into detail as to how this should be conducted, but will simply state that with the microscope and other modern appliances a diagnosis can very easily be made. The reader can readily understand, if such a condition exists, it would be a great injustice to subject the female to prolonged treatment even if she have some slight trouble.

In arriving at a diagnosis the general practitioner is, of course, much handicapped, and I believe it is almost impossible, in a complicated case, for him to arrive at a definite conclusion, first, because he is not constantly associated with gynecological cases, and in consequence cannot handle the instruments with the same ease nor to such advantage as thes pecialist; and secondly, he probably has not the appliances that may be required to arrive at a certainty when a diagnosis has to be made by exclusion. The difficulty is, of course, due to the inaccessibility of the uterus and appendages, and, above all, to the fact that it is impossible to note the development and descent of the ovum through the tube into the uterus. Hence I would suggest that such cases should invariably be under the care of a specialist, for even he, with everything at his command, cannot always arrive at an absolutely correct diagnosis, and I fear that in many instances he is not led to look carefully enough for a cause for sterility, but is content with treating, in a general way, some slight misplacement, adhesive bands, or so-called pelvic inflammation, which may have existed for a long time, and which perhaps in themselves do not give rise to any symptom. If the misplacement be a lateral or forward one, their patience is apt to be exhausted before its correction can be accomplished. Even though the cause of the sterility be discovered, many of the patients will not submit to any surgical interference in the way of operative measures, as there has always been a good deal of mystery connected with the procreative functions, and they at once regard surgical interference as opposed to the natural order of things.

Recognizing the many difficulties to be overcome, first, in obtaining the history, and, next, in following out any of the lines of treatment suggested in the text-books, which, in many instances, are extremely difficult and in the end perhaps futile, I thought if some very simple means could be devised by which the two vital elements could at least be brought together the probability of the desired result occurring (viz., pregnancy) would be increased fully fifty per cent., and so solve this difficult problem. It is unnecessary at present to mention the various operations and surgical appliances devised to accomplish this simple thing, for the reader is doubtless perfectly familiar with them, and knows or believes that, in the large majority of cases, a successful result is not obtained.

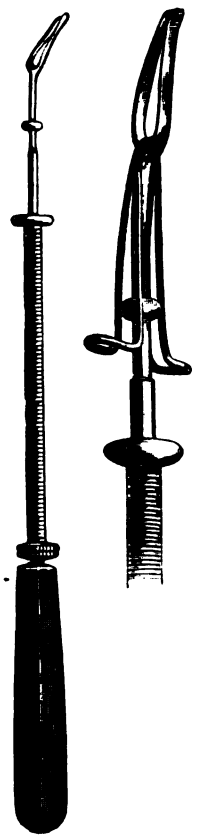
The instrument I introduce in the following cuts is a very simple affair, consisting of a continuous steel wire made so as to form an anterior and posterior blade, with a slight eversion at one end, and, at the other, is bent at right angles. This shape adapts it admirably for the position it is to occupy in the cervical canal. The instrument is entirely self-retaining, and, in consequence of its form, is not liable to change position. If, however, this should occur, it shows that it is not adapted to this special canal, and the operator can, with a small forceps, bend it to meet requirements. The dilator varies in length from one to three inches. The wire should be bent as desired, then tempered to give sufficient power, and heavily silver- or gold-plated. This makes it perfectly clean—in other words, renders it safe. The first instrument I made by simply taking a hair-pin and bending it into the required shape; this was used shortly afterward, being scraped and cleansed thoroughly with soap and water, and introduced with a plain dressing-forceps, the uterus being steadied by a tenaculum.



This primitive instrument, of course, is very much less effective, and apt to be even dangerous on account of its non-elasticity and possible accumulation of rust, whereas the present instrument is both yielding and aseptic.

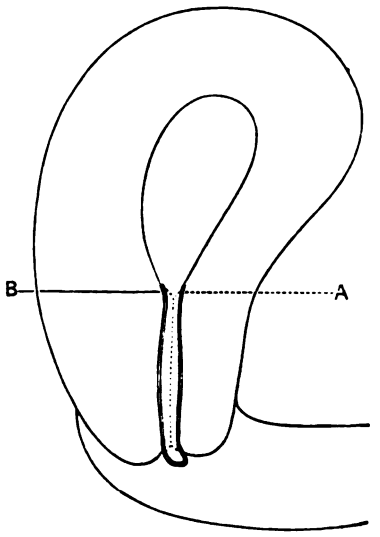
The patient was allowed to go home with this instrument *in situ*, with the effect of relieving the dysmenorrhœa from which she suffered, and inducing conception immediately after the next menstrual period.

Many will doubtless condemn this procedure; but if the instrument is examined, it will be found to act not only as a cervical dilator but also as a uterine drain, which makes it, in my opinion, far less dangerous than a uterine sound, provided gentle manipulation in introducing be adhered to, and the instrument be perfectly clean. Passing the ordinary uterine sound I do not consider dangerous, except in cases of marked stenosis of the cervical canal, and the three forms of flexions, the cause being purely a mechanical one, and very apparent. After the passage of the uterine sound there is, in these cases, a certain amount of sanguineous exudation, which sometimes does not escape at once; in fact, is often retained a number of hours. Retention of this fluid should not be allowed; for this, in my opinion, is where the danger comes in, as the mucous membrane within the uterus is very susceptible, and quickly acted upon. If this exudation be present, the temperature will rise at once from 102° to 104° F. Quinine and other remedies are generally given, instead of dilating the canal and allowing the immediate exit of the fluid, which would lower the temperature at once; whereas, if this is not done, an acute metritis, and perhaps general peritonitis and death, may follow. The glass stem now in use, in many instances, is a valuable instrument; but this, oftener than the sound, is dangerous, and it is simply that it excites more secretion, and does not permit sufficient exit for it. It can very readily be understood that, if the dilator that I have above described be *in situ*, it would be impossible for any of these exudations to accumulate or be retained, for nothing could afford better drainage for the uterine cavity than this instrument does; hence I would advocate its use in any case that needs uterine drainage. It is particularly adapted to any such case as above described. For introduction, the patient can rest either in Sims' position, or on the back, if using a bivalve speculum. The dilator is then put in the grasp of an instrument made especially for this purpose, such as is seen in the accompanying cuts. It is about ten inches long, and consists of two small steel blades, crescentic in shape, slightly curved, and about half an inch in length, which at the end fall together, making it similar to a slightly flexible blunt probe. There is a small space between these two blades, which gradually increases in size for two-eighths of an inch, then grows smaller, and coalesces in a slightly flexible rod which is about an inch long, smooth and round; on this there is a movable ball; the blades are shaped to hold and compress the smaller or inner end of the dilator, and, being movable, can be adjusted to any sized instrument that may be required. The rod now continues on, slightly increased in size, and terminates in



a handle; over the rod there is a spiral spring, about five inches long, with a circular attachment at either end, the one for pressing the spiral spring forward and upward with the finger, the other for holding the outer end of the dilator against the cervix while the introducer is withdrawn. The whole of this instrument should be silver-plated, though it is impossible for it to be soiled by use except on the end that holds the dilator. The introducer is about the size of the average uterine sound, and can also be bent in case there is any unusual deformity of the canal, though I think this will very seldom be found necessary. But to continue with the introduction of the instrument. A tenaculum should then be hooked in the cervix to steady it, and a sound passed to ascertain if there is any obstruction or irregularity of the cervical canal; being satisfied on this point, the dilator can now be introduced in precisely the same way as an ordinary sound. It must be remembered that to obtain a successful result the mucous membrane of the cervix should be uninjured; hence the operator must proceed with the gentlest kind of manipulation.

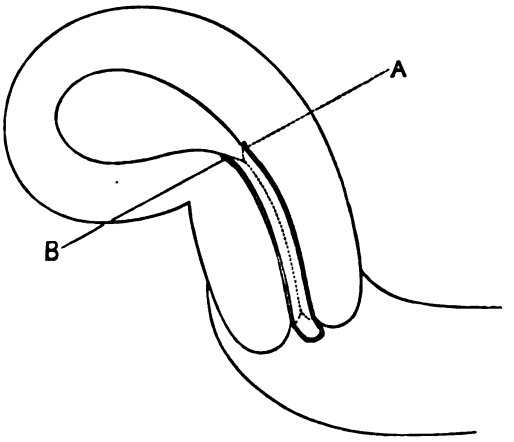
It will be noticed that in withdrawing the introducer the blades of the dilator are allowed to distend gradually, thus causing the patient no pain or discomfort. The protruding part of the dilator fits close to the cervix and does not interfere in the least with the movements of the uterus, nor can it be noticed during copulation. The accompanying cuts will show the dilator while being introduced, and when in place; also cuts of flexions in which these dilators will prove serviceable, as shown by A and B, A indicating point of constriction, and B the dilator, and, further, showing the necessity for instruments of different sizes and shapes.



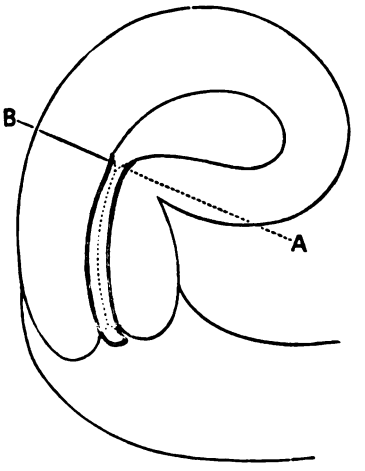
I claim for this instrument that it dilates the cervical canal, making it possible in every instance, after copulation, for the semen to gain admission to the uterine cavity, thus bringing the male and female vital principles together with certainty. It is my belief that conception usually occurs in the tubes; but then, if the spermatozoa gain admission to the uterine cavity, they can without doubt, by the motions peculiar to themselves, quickly reach the required goal.

I do not for a moment believe that sterility may not be due to some change in position of the tubes caused by surrounding inflammations and to previous attacks of peritonitis, or some bands that might constrict the tube itself, and so form a barrier to the ascent of the spermatozoa, and perhaps the descent of the ovum. In the normal state of affairs the large portion of semen is deposited in the vagina, and there undergoes decomposition; a small portion, if the cervical canal be normal, gains admission to the uterine cavity, and a still smaller portion to the Fallopian tubes. Now, if the tubal obstruction does exist, it can very readily be seen that there is a very slight chance of impregnation; for the small amount of semen that does gain entrance into the uterine cavity probably exhausts all its vital force here, or in passing the tubal obstruction. How much greater the chance of impregnation when a large quantity of semen gains admission, as is undoubtedly the case where the dilator is in the canal.

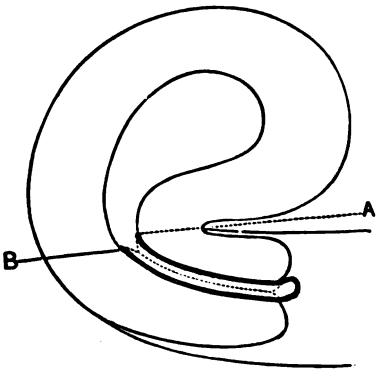
The indications for the use of this instrument are very



clear to my mind, and may be summed up in a few words: Obstruction of every kind in the tubes, whether due to inflammatory masses, old adhesions, or any malposition; also in slight discharge originating in the tube or ovary, a large and congested uterus, or with dilatation of the cavity, metritis or endometritis fungosa, or any growth or distortion involving the cavity of the uterus; flexions of

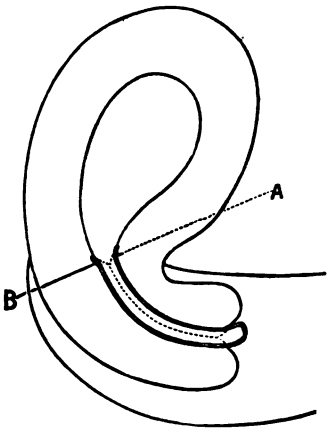


any kind, uncomplicated with stenosis, either involving the neck or body of the uterus; uterine displacements of any description; simple stenosis of the cervical canal or stenosis due to and complicated with anteflexions, lateral flexions, or retroflexions; any irregularity of the cervical canal or any growth or obstruction preventing communica-



tion between the vagina and endometrium; acute, subacute, or chronic cervical catarrh, stenosis of the os itself, or any erosion of the os that would give rise to an irritating discharge, cases of atresia of the vagina, also of profuse vaginal excretions, or when the vaginal secretion is

strongly acid, or contains some principle irritating and perhaps fatal to the spermatozoa; vesico-vaginal fistulæ; also, when there is a small amount of semen, and, lastly, cases that appear to be normal, but, for some reason that



cannot be found or explained, have been sterile. I would direct special attention to the last; for I believe there is a large field for this instrument in this class of patients.

I do not claim that in every instance a good result will be obtained in all the troubles cited, for I believe it better to correct such cases as fistulæ or acid vaginal secretions by some other means, and not rely on the instrument when some better method is afforded.

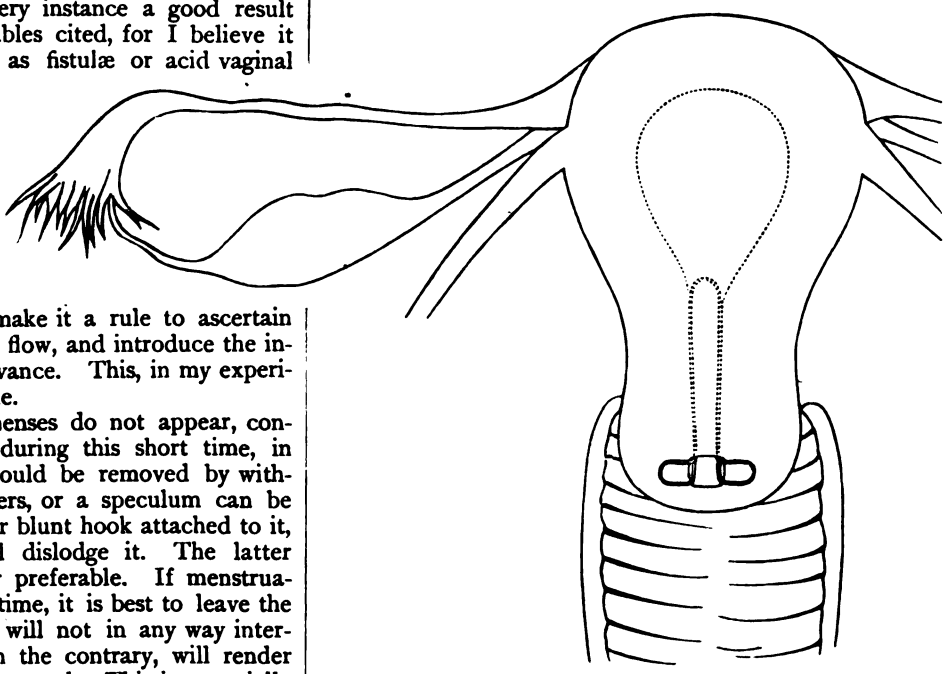
The most likely time for conception to occur is from one to five days after menstruation, though this is not the time I select for the introduction of the dilator. I make it a rule to ascertain the date of the next menstrual flow, and introduce the instrument five or six days in advance. This, in my experience, is the most desirable time.

It often happens that the menses do not appear, conception having taken place during this short time, in which case the instrument should be removed by withdrawing it gently with the fingers, or a speculum can be introduced and a tenaculum or blunt hook attached to it, and very slight traction will dislodge it. The latter method of removal I consider preferable. If menstruation should occur in the meantime, it is best to leave the instrument undisturbed, as it will not in any way interfere with this process, but, on the contrary, will render the flow far less painful than usual. This is especially noticeable to patients who have previously suffered from obstructive dysmenorrhœa; and, further, the instrument will be in position, and all irritation caused by its presence will have subsided, thus leaving everything in the most favorable condition for conception to occur.

The instrument should be left *in situ* for at least from five to eight days following the period. During this time conception should be expected. In case it does not occur previous to the period it should, at the end of this time, be removed, as nothing can be gained by its presence, except in cases where it is not introduced for sterility alone, and of which I will say nothing here. It does not, of course, interfere in any way with the sexual relations; in fact, after introduction the patient is not aware of its presence, unless there is some disproportion in the size of the instrument and canal, or that its shape is not adapted to the particular case in hand. In either instance it will cause some discharge, more or less, depending on the amount of irritation produced. This is a clear indication that the instrument should be removed or changed. Great attention should be given to this point, for it stands to reason that, if the instrument is not adapted to a given canal—in other words, is too large or too small, or not of the right shape—it may make a decided inroad on the tissues, and perhaps cause a profuse discharge, and even sloughing.

If in the vagina, the walls of which are elastic, we are compelled to use different-sized pessaries and specula, how much more important is it, then, to adjust a well-adapted instrument to the unyielding walls of the cervical canal. The ends of the dilator fit closely to the cervix, and the instrument moves only with the uterus and does not in the least restrict uterine or vaginal movement.

There are several advantages connected with this dilator: First, it is self-retaining and non-irritating (when properly adjusted), and, unlike all other instruments for this purpose, it permits perfect drainage from the uterine cavity. So far as my experience with this instrument goes, which extends over a period of four months, during which time it has been used over eighty times, it has been introduced and worn without the slightest danger, causing no discomfort whatever to the patient. It has been used principally at dispensaries, with no special directions except in case of discharge, pain, or rise of temperature, in which case patients were advised to present themselves at once. They are carefully directed as to the position they should assume following copulation, and this can only be determined at the time the instrument is introduced.



I strongly suspect that gynecologists who will use this instrument will be divided into two classes in regard to the results to be obtained with it—those who will use it with intelligence and those who will not. The former class will obtain good results, and, in proportion, laud it, while the latter will have bad results, and therefore be strong in condemnation. In my experience the difficulty has been in the manipulation, and not in the instrument. It is possible that it may be much abused, especially if used unnecessarily or recklessly. No definite rules can be laid down for its employment, what its shape should be, whether straight, or slightly or much curved; neither as to the time it should be introduced nor under what circumstances, and with what directions as to sexual relation position to be assumed by patient, etc. Such points as these can only be determined after examining each individual case.

I believe careful study will give facility in the use of this instrument, and lead to a proper appreciation of its value. I do not wish to be understood as maintaining that all the numerous instances of sterility so frequently met with can be cured by this agency alone. From the experience I have already had I am led to hope that this instrument will prove a valuable factor, and a much more active

means of inducing conception than any other single device now known to the medical profession.

I will only cite the two following cases among many other similar ones that have come under my care for sterility.

CASE I.—Mrs. F——, aged twenty-eight, married seven years, sterile; sharp, anteflexed uterus, and history of dysmenorrhœa. Dilator was introduced ten days before expected menstrual period, which not coming on, the instrument was carefully withdrawn some sixteen days later. Patient is now pregnant about four months, and everything appears normal.

CASE II.—Mrs. V——, thirty-five years of age, married eleven years; position of uterus about normal; some slight bands behind the uterus. Had been under medical observation, off and on, for three years, receiving operations and gradual divulsion of the cervical canal, counter-irritants, and tamponing. First time instrument was used she had her period as usual. It was withdrawn eight days after it, and introduced seven days in advance of the next expected period, which not coming on, the dilator was withdrawn twelve days later. Directions were of course given to avoid sexual relations except near the periods.

Many similar cases have been thus successfully treated, and a number of others with different histories.

There are a number of instances, of course, in which I would advise against the employment of any active measures, among which are cases of contracted or deformed pelvis, where it would be an inhuman act to allow conception to occur. Great care should be exercised to prove that no such obstacle exists, as it might prove a fatal issue.

Finally, it is my belief that, if the tubes and ovaries are not too thoroughly diseased, and a correct diagnosis be made in cases of sterility, and proper treatment carried out, either by the use of this instrument or some other suitable means, a successful issue can invariably be obtained. The result is simply a question of time, perseverance, and careful observation.

This instrument has been used also with marked success in cases of obstructive dysmenorrhœa, in chronic metritis and endo-cervicitis, also as a uterine drain following curetting of the uterus, and as a dilator after trachelorrhaphy or amputation of the cervix to prevent closure of the canal. In cases of pelvic and other abscess, where complete drainage is essential to success, this instrument will be found valuable. It can, of course, be made sufficiently large for any case. In flexures of the uterus I believe there is a large field for it, though I cannot at present give any absolute opinion of this.

39 WEST THIRTY-SECOND STREET, NEW YORK.

THIRST IN INFANTS.—It is a mistake to suppose that because milk is a liquid food it is at the same time a drink which is capable of satisfying the thirst of infants. Although milk appeases hunger, it makes thirst more intense after it has remained some time in the stomach and digestion of it has begun. It is thirst which causes healthy, breast-nourished infants to cry for long periods of time in many instances. There are many cases of indigestion due to weakness or insufficiency of the child's gastric juice, which would be greatly benefited or even cured if the child were allowed an occasional drink of water.—*Medical Classics.*

INOCULATION OF CANCER.—Dr. Hahn, of Berlin, has recently demonstrated the possibility of inoculating cancer, on a woman who was admitted into hospital for advanced recurrent cancer of the left breast (*The Medical Press*). He transplanted to the corresponding site on the right breast three grafts of cancerous skin, and when the patient succumbed, three months later, a microscopical examination of the tissues at the point of inoculation afforded incontrovertible evidence of the presence of cancerous elements.

THE COLD-WATER TREATMENT OF TYPHOID FEVER.

BY SIMON BARUCH, M.D.,

ATTENDING PHYSICIAN TO THE MANHATTAN GENERAL HOSPITAL AND NEW YORK JUVENILE ASYLUM.

THE numerous inquiries, suggestions, and criticisms which have reached the writer, since the publication of his recent paper on the above subject, induce him to add the following:

The chief aim of the paper was to present to the profession a *résumé* of experience from various reliable sources, together with practical and theoretical commentaries, as food for reflection. The variety of sources, the striking character of the results, together with the fact that it was no pet scheme of my own devising that I advocated, will, I trust, induce the profession to ponder well the points brought out. I ask nothing more. That this result is in process of accomplishment is evident from the fact that the paper has been extensively reproduced, and, editorially or otherwise, commented upon.

One correspondent (MEDICAL RECORD, March 16, 1889) fears "that this stupendous array of facts and figures will not carry universal conviction," because "they run too much athwart an easy-going routinism."

The rule to immerse a patient in a bath of 65° F. for fifteen minutes, every three hours, so long as the temperature reaches 103° F., savors of routine. But this is not true; it is simply a general guide for action, and, as will be seen further on in Dr. Brand's letter, is not without difficulty in its application. The temperature of 103° F. is regarded as an index to the intensity of the infective process, whose ravages it is the sole aim of the bath to counteract. Indeed, a lower temperature is, as I have mentioned, indication for the bath, when the heart and nerve-centres are failing, as manifested by a feeble and rapid pulse, tendency to cyanosis, feeble first-sound and apex-beat, or by stupor, subsultus, hiccough, and muttering delirium. I have, in the necessarily brief outline of the methods, distinctly described the modification of the bath for this condition, viz., a warm half bath with cold affusion. Adhering to a routine full bath would, in these cases, seriously enhance the depression, if it did not lead to death. As I have endeavored to emphasize in recent papers on hydrotherapeutics,[1] everything depends on the method; in the application of no remedy is it so important to individualize. The latter testifies to the great therapeutic value of water, and proves that it is a two-edged sword.

It has been objected "that it is a very delicate adjustment of treatment, when a patient is saved or doomed according as it is inaugurated on the fourth or fifth day." This objection, if valid, would apply to much of our therapeutic endeavor. *Obsta principiis* is the first principle of rational therapeutics. Disease has often been likened to a conflagration, the ease of whose subdual is in proportion to the stage at which it is attacked. In the severe types of malarial fever, for example, one day's—yes, one hour's—cinchonization may save the patient's life; its delay may doom him to death or to a long-continued invalidism, from which quinine could no longer rescue him.

The object of the cold-bath treatment of typhoid fever is to render it mild under all circumstances, by preventing complications. This can only be accomplished if it be treated energetically from the beginning. If, as Fraser has shown, among over two thousand cases not one died which came under treatment before the fifth day, it should be our endeavor to approximate this successful practice. But herein lies a difficulty. The diagnosis cannot be positively made at this early date. We may escape from the delirium by treating all cases of fever, whose temper-

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[1] Dietetic Gazette, April, 1889.

ature range and other symptoms are suspicious, by the cold bath. Harm will surely not ensue. It is well on the inception to resort to cold ablutions with towels (not sponging). Friction aids heat elimination by dilating the cutaneous vessels, and the shock refreshes the nerve-centres (Winternitz). Then the patient grows accustomed to the more energetic bathing, which may be opened with the half bath, combined with gentle chafing, and gradually culminate in the full bath at 65° F.

I may reiterate here that in no case should the stationary bath-tub be used for treating typhoid fever. Cold ablutions with towels are to be preferred to three-hourly removal of the patient, with its attendant excitement, to a bath-tub in which assistance cannot be readily afforded him on account of its accessibility on one side only. A portable bath-tub must be provided and placed near the bed. The surface should be constantly chafed to prevent chilling, and a stimulant should be administered to assist reaction if indicated. With these precautions collapse-like manifestations need not be apprehended. Collapse can only occur from resorting to temperatures below 65°, or from too long immersion; for it has been demonstrated by the best clinical observers that the cold bath is a heart-tonic, if reaction is provided for (Vogl has never seen a case of collapse in fifteen years' experience). "That the alteration in Peyer's glands will not go beyond the stage of infiltration, if treatment is instituted before the 'fateful fifth day,' is another prediction that raises dubious questionings," says Dr. McCarkey (MEDICAL RECORD, March 16th). Fortunately for the patient, but unfortunately for our pathological enlightenment, autopsies are rare in cases treated by the strict cold bath; only two deaths, occurring from other causes in patients treated before the "fateful fifth day," furnish evidence on this point. One case is reported in the *Lyons Médicale*, 1886, No. 14, and another by Brand in 1883; in the former, dying on the twenty-first day in a typical typhoid fever, there was "no loss of substance, old or new, in the intestine; in the latter (on the thirty-first day) "no ulceration, cicatrix, pigmented spot, only fresh infiltration." Moreover, it may be replied that if diarrhœa, meteorisin, hemorrhage, and dry, red tongue are indications of ulceration of the intestinal glands, the absence of these symptoms in the large proportion of cases treated by strict cold bathing must be accepted as evidence of absence of ulceration. Vogl (*Deut. Archiv. f. Kl. Med.*, 1888, No. 61) says: "The diminution of intestinal symptoms is a very evident effect of the cold bath; a few trials will convince and surprise anyone of its success. Among 221 cases there was a daily average of only 0.7 per cent. of diarrhœal stools, while in the cases treated by a combination of baths with medicinal antipyretics the average was 1.9 diarrhœa. Never was it necessary (in 251 cases) to resort to opium, bismuth, etc.; meteorism with tense abdominal walls was observed only in cases received late; it was diminished by the baths. Bloody stools were noted only twice; peritonitis not at all." If inappropriate diet is capable, as we know, of aggravating the intestinal symptoms, and if proper diet is capable of preventing or ameliorating them, why may not the invigorating effect of the cold bath upon the innervation and circulation influence favorably the local processes, which are but the manifestations of the general infection? Just as quietude, cleanliness, ventilation, and proper feeding have, in recent times, rendered typhoid fever more tractable and reduced its mortality, so does the cold bath, by immensely enhancing the "refreshing influence" of these elements of treatment, make the disease more mild, and reduce its mortality. It is well known that the earlier a case is withdrawn from unfavorable hygienic surroundings, the more pronounced will be the effect of the improved conditions; and this holds good of the early application of that greatest of all invigorating measures, the cold bath.

In reply to the objection that poverty would forbid the execution of the rigorous bath treatment, Brand relates a touching instance. He was called to a case in the fourth story of a miserable house in Stettin, a child, six years old, attended by an old, deaf, and crippled grandmother, a weakly but intelligent boy of eleven, and a sister of twelve, the parents being day laborers. There was one room and a dark closet for six persons. The boy declined to have his sister sent to the hospital, and said that he had sent for Brand because he wanted his sister treated by cold water. The child was regularly bathed and nourished, the temperature chart kept by these children; the girl also fell sick, and now the boy nursed both. He became ill with a mild type and bathed himself also, while his sister and brother were nursed by him. "The little hero's name is Franz Witte; he is to-day a printer in the Redé establishment," writes Brand, "and I have kept the histories written by him as a memorial." Brand also relates the histories of cases complicated with heart-disease, pregnancy, whooping-cough, parametritis, pneumonia, and other diseases, which offered no contraindication to the cold-bath treatment. I am satisfied that, ten years ago, I saved the life of young B——, living nine miles from Camden, S. C., by sending him my own bath-tub. Confidence in the method will thus overcome many of the apparent difficulties of this treatment. In conclusion, I am glad to be able to furnish the following translation of a letter just received from Dr. Brand, the originator of the systematic bath treatment:

"I thank you very much for your kind attention. I had already become acquainted with the contents of the article. A gentleman sent me a cutting from the *Philadelphia Record*, containing a tolerably correct review of your essay.

"You were already known to me by a paper you read in 1886 to the New York Academy of Medicine, on the 'Treatment of Typhoid Fever.' It appears that your views have somewhat changed during the past two years—to the advantage of the treatment. You said at that time: 'The heroic treatment has not found favor in our hospitals,' and in another place 'the sudden submergence into a bath of 60° F. may not weaken a German soldier, but it is not so well adapted to an American constitution' [this quotation is in English in the letter]. With reference to the last sentence, you do not seem to have kept in view the fact that not only soldiers, but, also, small children and old people are bathed in water at 60° F., and that the constitution of our babies is certainly not more tender than that of the adult American.

"The five objections to which you refer, and which you believe may be brought against the water treatment, would, if they really occur, which I do not believe, scarcely have any weight. Do we fear chloroform because the patient is nearer death than life, and looks like a corpse? do we fear the knife because it causes blood to flow?

"Sleep is not interrupted by the water treatment, but stupor, which is by it converted into a three-hourly sleep. Then the stupor returns, and must be (the indication demands it) again removed by a new bath. Good sleep should never be disturbed. That the water treatment is not adapted to hospitals, because patients do not enter before the fifth day, is a misunderstanding. Hospitals must only not expect a mortality from 0 to one per cent., which only occurs to those who receive the typhoid cases before the fifth day. Hospitals must be content with a mortality of four to five per cent. (as an average), hence only the third part of mortality which is usual in the expectant treatment (fifteen to twenty per cent.) If a hospital physician thoroughly understands the method, he only loses the peritonitis and hemorrhage cases, of the others only exceptionally one. You will find more of this in the reports which I have the honor to send you. There is only one real objection to the Brand method, and this is urged only by myself, it is the difficulty of learning it thoroughly, and every one must be his own teacher because there is no school where it is taught. Tübingen, Munich, and Lyons are the only places in the world where this is pos-

sible. Added to this is the fact that there is not only a lack of preparation for it, but the teachings of the schools on the expectant method is wrong and misleading for the water treatment. It appears very difficult for some to believe it possible that the fever patient cannot take cold in the bath, especially if he has been perspiring, and that no fluxion to the internal organs can take place, that bronchial catarrh is not increased by it, that pneumonia and intestinal hemorrhages may not occur. Hence unwillingly (or not at all) does he obey the demand that absolutely no change shall be made in the principle of the treatment, viz., to bathe every three hours in water at 60° F. for fifteen minutes; that the bath must not at one time be warmer, at another of shorter duration. In one word, the physician cannot enjoy the same latitude in the water treatment that the expectant method affords him. To this point most men object strenuously. They overcome it (like all English people), and if the result does not correspond with mine, the water treatment is pronounced worthless, when really the observer is worthless. If you desire to learn the subject thoroughly, you would do well to look through the works of Vogl, of Munich, and Tripier and Bouveret, of Lyon, because my writings are now out of print. They correspond tolerably well with the latter, though not entirely."

Progress of Medical Science.

Early Experiments with Nitrous Oxide.—Dr. Richard Ellis sends the following account of the influence of nitrous oxide (copied verbatim from a medical book published in 1806): "When Mr. Humphrey Davy, to whom we are indebted for ascertaining the effects of this wonderful agent, breathed seven quarts of it, muscular motions were produced to a certain extent; sometimes he manifested his pleasure by stamping or laughing. At another time, having breathed nine quarts of the air, he first lost the perception of external things, and a vivid and intense recollection of some former experiments passed through his mind, so that he called out 'What an amazing concatenation of ideas!' When he breathed twenty quarts, a thrilling sensation from the chest to the extremities was almost immediately produced. By degrees the pleasurable sensations were increased; he lost all connection with external things, trains of vivid visable images passed through his mind, and were connected with words, in such a manner, as to produce perceptions perfectly novel. He supposed that he existed in a world of newly connected and newly modified ideas. He theorized and imagined that he made discoveries. Upon waking from this semi-delirious trance, indignation and pride were the first feelings produced, by the sight of persons about him. His emotions were enthusiastic and sublime, and he exclaimed with a loud voice, 'Nothing exists but thoughts! the universe is composed of impressions, ideas, pleasures and pains.' After this he expressed his pleasure by laughing and stamping. Mr. Tobin, having taken two quarts into his lungs, laughed, staggered, threw himself into a variety of theatrical attitudes, traversed the laboratory with a quick step and his mind was elevated to a most sublime height. Mr. Wedgwood had six quarts administered to him, when he threw the bag from him, and kept breathing on furiously with open mouth, and holding his nose with his hand, having no power to take it away, although aware of the ridiculousness of his situation. Mr. George Burnett felt a general swell of sensations, which mounted so fast, that had he not desisted to breathe the gas, he would have fainted from ecstasy. Southey, the poet, breathing the gas, exclaimed, 'The air of the highest possible of all heavens must consist of this gas.' For many years after this, not seeing the experiments of Mr. Davy confirmed by other chemists, Dr. James Woodhouse, professor chemistry—Phil. believed the influence of the imagination caused all the effects ascribed to the nitrous oxide. In the winter of 1806, having prepared a quantity of this gas, extremely pure, from the nitrate of ammoniac, made by the direct combination of the nitric acid and the carbonate of ammoniac, two quarts were administered to Henry Latrobe, who breathed it in a fair manner; in one minute he was affected in a most violent manner; he walked up and down the laboratory with a quick step, elevating one leg after the other, and then suddenly throwing it to the ground; he laughed immoderately and convulsively, the tears rolled down his cheeks in large drops and he frothed at the mouth. I immediately resolved to try the effects of the gas on other persons, in doses of two and four quarts. Mr. —— fainted and recovered in three minutes. Mr. —— looked wild, jumped over a high bench and the effect suddenly ceased. Mr. —— placed his arms a kimbo and surveyed the audience with great contempt. Mr. —— was very much deranged; he ran about the laboratory, bellowed like a mad-bull, and struck at every person near him. Same effect a week after. Mr. —— exclaimed, 'I am in heaven, ye Gods, stars, comets, meteors, Mahomet's a jackass, the Elysian fields are a hell compared with this,' and then fainted. Many others laughed and fainted. I am now convinced the gas produces all the effects ascribed to it by the justly celebrated Mr. Davy, and I am happy in having this opportunity of confirming his experiments. The following letter was received from Professor Silliman of Yale (one of the most noted chemists of his day). 'I have lately given the nitrous oxide a full and fair trial, and the result confirms Mr. Davy's account of this wonderful agent. In my own case after only two inspirations, I felt a momentary loss of distinct thought, then sensations of such pure and vehement delight, that after failing in an attempt to express to my friends by articulate words the pleasure I felt, I demonstrated it by leaping up and down, stamping on the floor, and loud convulsive laughter. One of our gravest citizens was made to caper about like a monkey, with all the extravagant gestures of a tragedian, and the grimaces of a Harlequin. Some effect was produced on all who breathed the gas, and the full effect was manifested in six instances out of eight. Six or eight quarts breathed into and out of a sick boy, will always, I believe, produce the effect.'"

Edinburgh Medical Missionary Society.—At the annual meeting of this Society for 1888 it was reported that 23,711 patients had been treated by the missionaries in the dispensaries of the Society or at the homes of the sick. There were twenty-three students preparing for medical missionary services, and on behalf of these there had been expended for books and instruments about $5,000. The income of the Society is inadequate to meet its expenses, and it is obliged every year to draw upon its capital.

Is Syphilis Ever Cured?—"Syphilis is never cured." Such is the positive dictum of Dr. W. R. Gowers in his recent lectures on "Cerebral Syphilis." Dr. Gowers should come to the United States and learn some of the methods in vogue here; for certainly many cases of syphilis in this country get well. "Syphilis," says one well-known American writer, "is one of the most readily managed and promising of all diseases that affect the human race." Says another writer: "In a large proportion of cases, syphilis will run its course and leave the patient in a healthy condition, even though no special treatment is instituted." Still a third American syphilographer says: "By far the largest majority of cases will pass through the trouble easily and happily to a complete cure." It would appear that either American syphilis is a specially benign article, or the English physician writes from very narrow experience in this affection.

THE MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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MEDICAL NEW YORK A HUNDRED YEARS AGO.

THE Centennial celebration now approaching is turning all thoughts to New York as it was a hundred years ago, and some of the facts regarding the medical profession at that time may be appropriately dwelt upon now. In recent issues of the *Medical Register* of this city, and in his classical paper on "Medical New York One Hundred Years Ago," Dr. John Shrady has collected a number of interesting historical notes regarding the state of physic in New York City during the last century.

The Directory of 1787 contains the names of 21 doctors, 7 druggists, 1 midwife, 1 barber-dentist, and 1 surgeon. Two years later the number of physicians had increased to 37, among whom was Dr. Wright Post; but hardly any other name familiar and prominent to-day was on the list. The New York Medical Society was organized with John Bard, President, and a membership of twenty.

The columns of the newspapers of the day were liberally supplied with advertisements of cures for cancer, consumption, etc., while "Leak's Justly Famous Pills" and "Dr. Walker's Jesuit Drops for the Cure of Venereal Disease," seem to have been popular with our revered ancestors.

A literary event of importance at this time was the publication of an American edition of "Cullen's Materia Medica." The English work cost two guineas and a half, a price thought to be highly exorbitant by the American printer.

Considerable excitement was caused at about this period by the horrid practice of body-snatching. Even the sacred precincts of Trinity churchyard were invaded, and Mr. Livingston offered, as Treasurer of the Corporation, $100 reward for the discovery of the offenders. It was the blacks, however, whose bodies were more often stolen; and finally, for purposes of protection, the colored people bought a private yard in Gold Street. The troubles over this matter finally culminated in the riot of one hundred and one years ago, known as the "Doctors' Mob." The account of it given by Mr. Thomas Jefferson may be interesting.

He wrote to a friend: "A riot has taken place in New York, which I will state to you from an eye-witness. It has long been a practice with the surgeons of that city to steal from the grave bodies recently buried. A citizen had lost his wife; he went the first or second evening after her burial, to pay a visit to her grave. He found that it had been disturbed, and suspected from what quarter. He found means to be admitted to the anatomical lecture of that day, and, on his entering the room, saw the body of his wife, naked and under dissection. He raised the people immediately. The body, in the meantime, was secreted. They entered into and searched the houses of the physicians whom they most suspected, but found nothing. One of them, however, more guilty or more timid than the rest, took asylum in the prison.

"The mob considered this an acknowledgment of guilt. They attacked the prison. The governor ordered militia to protect the culprit and suppress the mob. The militia, thinking the mob had just provocation, refused to turn out. Hereupon the people of more reflection, thinking it more dangerous that even a guilty person should be punished without the form of law, than that he should escape, armed themselves, and went to protect the physician. They were received by the mob with a volley of stones, which wounded several of them. They hereupon fired on the mob, and killed four. By this time they received a reinforcement of other citizens of the militia horse, the appearance of which in the critical moment dispersed the mob. So ended this chapter of history, which I have detailed to you, because it may be represented as a political riot, when politics had nothing to do with it. Mr. Jay and Baron Steuben were both grievously wounded in the head by stones. The former still kept his bed, and the latter his room, when the packet sailed, which was on April 24th."

By the year 1789 New York had already a hospital chartered and organized; but through various misfortunes patients had not yet been admitted. King's University had begun to educate its medical students twenty years before.

Probably the leading physicians of the time were the Drs. Bard, father and son. The former used to drive about the town in a low phæton. He wore a red coat, a cocked hat, and carried a gold-headed cane. His son became still more distinguished, and was the family physician of George Washington while the father of his country lived in New York.

MEDICAL MEN AND THE MANAGEMENT OF MEDICAL COLLEGES AND HOSPITALS.

IN an address recently delivered before the Medical Society of Philadelphia, Dr. Alfred Stillé speaks forcibly of the importance of medical colleges being managed wholly or almost wholly by the faculty, and not by laymen.

He quotes *The Nation* as saying: "No university has anywhere ever become a great influence, or anything but a school for children, which was not wholly or almost wholly in the hands of the faculty or teaching body. The faculty is the university. If you have the right sort of faculty you have a university, though you have only a tent to lecture in. If, on the other hand, you try to make a university out of a board of sagacious business men acting as trustees, and treat the professors as simply 'hired men,' bound to give a college so many hours a week, you may have a very good school for youths, but you will get no enlightening influence or force out of it for the com-

munity at large. Instead of speaking with authority on any of the great themes of the day, the college will be sneered at, as colleges are apt to be in the United States to-day, as the homes of theorists and pedants, whose impudence in differing in opinion from millionnaires merits and is sure to receive severe rebuke."

This principle, so universally admitted to be true for colleges, ought to apply in a great measure also to the management of hospitals. In almost all hospital management, as at present conducted, the physician has practically no voice or representation. In one large hospital in this city the rules even forbid the election of a medical man to the governing board, a rule which is little less than an insult to the medical gentlemen who serve the institution so favorably.

It is quite true that many physicians are poor business men and not fitted for or inclined to executive work. This is not much less true of the generality of laymen. On the other hand, the special knowledge required in looking after the needs of a hospital must be acquired largely by consultation with physicians, who are thus made to contribute their services gratis, not only to the patients but to the wealth and piety which are the only modern requisites for a hospital manager.

THE CONDUCT OF THE SURGEON.

In Vicary's curious old work, "The Anatomie of the Bodie of Man," written in 1548, we find a disquisition on the art of surgery, and the qualifications of the surgeon, which applies not at all badly to the present day. As chief surgeon to St. Bartholomew's Hospital, and one of the patchers up of Henry the VIII.'s syphilitic legs, besides being surgeon to Queen Mary, Edward VI., and Queen Elizabeth, Vicary had excellent opportunity to learn what should constitute a good surgeon.

And it is evident that Mr. Vicary lays much stress upon the natural, moral, and physical qualifications of the man, for he says, phonetically, "Upon this poynt al Authors doo agree that a Chirurgeon should be chosen by his complexion [natural temperament], and that his complexion be very temperate and al his members wel proportioned." It is also insisted that the surgeon "be a good liver and a keeper of the holy commandments of God." [Two things now looked upon as somewhat antagonistic.]

It is agreed by "al Authors that his body be not quaking, and his hands stedfast, his fingers long and smal, and not trembling; and that his left hand be as ready as his right hande, with al his lymmes able to fulfil the good workes of the soule."

To be perfect in his art, Mr. Vicary notes "foure thinges moste specially that every chirurgeon ought to have: The first that he be learned; the seconde, that he be expert; the third, that he be ingenious; the fourth, that he be wel manered."

Experience, learning, ingenuity, and a fine behavior are truly excellent qualities for the surgeon of to-day as well as of three centuries ago.

The learning that Vicary advises is "the principles of Chirurgie and Physicke, natural Philosophy, Grammar, Rhetoricke, and Anatomie."

He must be "ingenious and wittie; for al things belonging to Chirurgie may not be written, or with letters set foorth."

Under the head of manners our author discourses well upon the subject of surgical ethics. The surgeon, he says, "must be no spouse-breaker or drunkard. Likewise a Chirurgeon must take heede that he deceive no man with his vain promises, for to make of a smal matter a great, because he would be counted the more famous." The chirurgeons must not be flatterers, or mockers, or backbiters. They must not be proud or presumptuous, nor covetous or niggardly. They shall give no counsel except when asked, and they must "be privie and secrete as any Confessour of al things that they see or hear in the house of their Pacients." They must be bold in those things whereof they are certain, and cautious in all peril. They should not chide the sick, but be always pleasant and merry. They must not covet any woman "by way of vylanie, and specially in the house of their Pacient"—this special stress being evidently made a slight concession to the dominance of the sexual passion.

The author adds: "He shall not for covetousness attempt to cure incurable diseases, or set a day when cure will be complete."

The surgeon must be gracious and good to the poor, "and of the rich take liberally for bothe," an injunction scrupulously followed by some at the present day.

Surgeons should never praise themselves, "for that redoundeth more to their shame than to their fame;" and a "cunning and skilful chirurgeon neede never vaunt of his doings, for his works will ever get credit enough."

We conclude Mr. Vicary's excellent discourse with his own final and most pertinent injunctions, that the surgeons "despise no other chirurgeon without a great cause; for it is meete that one chirurgeon should love another as Christe loveth us all; and in thus doing they shall increase both in vertue & cunning to the honour of God and worldly fame. To whome he bring us al. Amen!"

The precepts taught at St. Bartholomew's for so long have not grown old, but apply with good force to-day.

News of the Week.

Medical College Commencements.—So far, we have recorded announcements of 25 medical colleges, which have graduated about 1,800 physicians. Further announcements are: Ellsworth Medical College, 9; Keokuk College of Physicians and Surgeons, 39; University of Georgia, 53; Howard University, 10; Iowa College of Physicians and Surgeons, 9; Arkansas State Medical College, 22; Fort Wayne Medical College, 9; Memphis Hospital Medical College, 63; Detroit College of Medicine, 43.

A New Naval Hospital.—Surgeon-General Browne, U. S. N., recently visited Portsmouth, N. H., and selected a site for a new naval hospital, which will be built this summer on Leary's Island. The building will front the inner harbor. It will be a brick structure, three stories high, with accommodations for twenty or twenty-five patients. The upper stories will be devoted to the general service. The new building when completed will cost $35,000.

The Illinois State Medical Society meets at Jacksonville on May 21–23.

SOME RECENT JUDICIAL DECISIONS.—The Supreme Court, General Term, recently handed down decisions to the effect that a doctor may be convicted for practising without a license, though he has been following his profession here for thirty years; that fifteen thousand dollars is too much, and ten thousand enough, damages for the loss of a boy's arm; that a physician's lips are sealed as to information acquired while attending a patient professionally.

THE COMING MEETING OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION.—The meeting of the American Medical Editors' Association will be held at the Casino at Newport, Monday evening, prior to the opening of the American Medical Association. The editor and staff of the *New England Medical Monthly*, together with a few friends, will tender to the Association a steamboat excursion, with plenty of water on board, and at the end of the sail a regular old-style Rhode Island clam-bake.

BEQUEST TO DENVER MEDICAL COLLEGE.—Mr. Jacob Haish, of DeKalb, Illinois, has recently given $15,000 to the medical department of the University of Denver which makes a total of $40,000 that Mr. Haish has given to the University.

THE MEDICAL AND CHIRURGICAL FACULTY of Maryland (State Faculty) will hold its Ninety-first Annual Session April 23d–26th, 1889. Professor William Oster, of Johns Hopkins University, will deliver the Annual Address on "The License to Practice," with special reference to State Boards.

THE MICHIGAN STATE MEDICAL SOCIETY.—The Twenty-fourth Annual Meeting of this Society will be held at Kalamazoo, Mich., May 9 and 10, 1889.

THE SHELBY COUNTY (IND.) SOCIETY celebrated on April 8th its Second Anniversary, by a scientific meeting, a dinner, and the election of officers for the ensuing year. Dr. R. R. Washburn, of Waldron, is President, and Dr. I. W. Inlow, of Cynthia, Secretary.

THE ORGANIZATION OF THE AMERICAN MEDICAL ASSOCIATION for its meeting, June 25th, 26th, 27th, and 28th, is as follows:—*Practice of Medicine, Materia Medica and Physiology:* Dr. F. C. Shattuck, Chairman, Boston, Mass.; Dr. G. A. Fackler, Secretary, Cincinnati, O. *Obstetrics and Diseases of Women:* Dr. W. H. Wathen, Chairman, Louisville, Ky.; Dr. A. B. Carpenter, Secretary, Cleveland, O. *Surgery and Anatomy:* Dr. N. P. Dandridge, Chairman, Cincinnati, O.; Dr. W. O. Roberts, Secretary, Louisville, Ky. *State Medicine:* Dr. J. Berrien Lindsley, Chairman, Nashville, Tenn.; Dr. S. T. Armstrong, Secretary, U. S. M. Hospital Service. *Ophthalmology:* Dr. George E. Frothingham, Chairman, Ann Arbor, Mich.; Dr. G. C. Savage, Secretary, Nashville, Tenn. *Laryngology and Otology:* Dr. W. H. Daly, Chairman, Pittsburg, Pa.; Dr. E. Fletcher Ingals, Secretary, Chicago, Ill. *Diseases of Children:* Dr. J. A. Larrabee, Chairman, Louisville, Ky.; Dr. C. J. Jennings, Secretary, Detroit, Mich. *Oral and Dental Surgery:* Dr. F. H. Rehwinkle, Chairman, Chillicothe, O.; Dr. E. S. Talbot, Secretary, Chicago, Ill. *Medical Jurisprudence:* Dr. James V. Kiernan, Chairman, Dunning, Ill.; Dr. T. B. Evans, Secretary, Baltimore, Md. *Dermatology and Syphilography:* Dr. L. D. Bulkley, Chairman, New York; Dr. W. T. Corlett, Secretary, Cleveland, O.

THE ACADEMY OF MEDICINE, CINCINNATI, O., elected the following officers for the ensuing year: President, Dr. William Judkins; 1st Vice-president, Dr. George W. Ryan; 2d Vice-president, Dr. W. S. Christopher; Recording Secretary, Dr. G. A. Fackler; Corresponding Secretary, Dr. G. W. Withrow.

THE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF MISSISSIPPI for the current year was held in the City of Jackson, commencing on April 17th.

THE SOUTH CAROLINA MEDICAL ASSOCIATION will hold its next annual meeting at Charleston, S. C., on Wednesday, April 24, 1889. An address will be delivered by Dr. Robert Battey, of Rome, Ga.

A DINNER TO DR. TRAILL GREEN, OF EASTON, PA.—The Medical Society of Northampton County, in connection with the celebration of the Fortieth Annual Meeting of the Society, propose tendering a complimentary dinner to Dr. Traill Green, of Easton, the founder of the Society.

BEQUESTS TO MEDICAL INSTITUTIONS.—The will of the late Mrs. Turner Sargent, daughter of Dr. Oliver Wendell Holmes, contains, among others, the following public bequests: $5,000 to the Massachusetts General Hospital for a free bed, to be called the "Turner Sargent" bed; $1,000 each to the Children's Hospital and House of the Good Samaritan of Boston; $10,000 to Harvard Medical College, in memory of her father, the income to be applied to the use of the anatomical department, under the direction of the professor of anatomy.

THE LIBRARY OF THE NEW YORK HOSPITAL has recently been enriched by the addition of the library of the late Dr. T. T. Sabine, containing about five hundred bound volumes, besides over two hundred and fifty pamphlets; it has also received about one hundred and fifty volumes from the library of the late Professor J. C. Dalton. While congratulating the Hospital on its valuable accessions, it seems a little unfortunate that so many works should go down below Eighteenth Street and beyond convenient access for nine-tenths of the physicians of the city.

AN OLDER GREEK LETTER MEDICAL SOCIETY.—Dr. John L. Gish, of Jackson, Mich., writes: "In your number of March 16th, you call attention to a Greek letter medical society, the Delta Epsilon Iota, organized by the students of the Yale Medical College. This notice calls me to acknowledge the formation and organization of the second *strictly* Greek letter medical fraternity in the United States, or elsewhere, of which we have any knowledge. We wish for this fraternity as much success, as much personal good and fellow love as has attended our Society, the Nu Sigma Nu—a strictly Greek letter medical fraternity, organized and formed by several members of the Medical Department of the University of Michigan in April, 1881."

A GREAT EPILEPTIC COLONY.—The municipality of Berlin intends to create a new establishment for 700 epileptic patients, capable of being so enlarged as to receive 1,000, at Bissdorf, a village near the city. It is to have a farm and ample grounds attached to it, and is to consist of a central building and many cottages scattered over the grounds, each with a garden around it. The whole will cost about $1,182,500.

THE LOCAL APPLICATION OF ANTIFEBRIN.—Dr. A. H. Neuth writes to the *Lancet* that he has had remarkably good results in the use of antifebrin, externally, as a sedative. His usual plan is to prescribe it with lanoline or vaseline in the proportion of twenty grains to the ounce, combined with other ingredients that seem applicable to special cases. In obstinate irritable ulcers it soothes the pain and subdues the inflammation. In psoriasis, combined with some mercurial preparation, it acts like a charm. He has also tried it in erythema, erysipelas, eczema, herpes, urticaria, and other complaints associated with considerable irritation, and has found it a most useful adjunct to suitable remedies.

DR. JOHN W. WILLIAMS, Surgeon in the United States Army, died at Jackson Barracks, below New Orleans, April 16th. He was a native of Washington, D. C., and was appointed to the Army in 1862. He was medical officer of Merritt's Cavalry Division.

AT A RECENT TRIAL OF TWO APOSTLES OF "FAITH-CURE" in Sioux City, Ia., for practising medicine without a license, the judge instructed the jury to find for the defendants, as it was no crime under the laws of Iowa for a person to pray for an afflicted neighbor.

NOCTURNAL MEDICAL EDUCATION.—Says the *Lancet*: "It is said that no less than from ten to fifteen per cent. of medical students in Dublin pursue their medical studies and attend their prescribed courses of lectures at night. They stick to their business or desk during the day and become medical students at night, with such accommodation as some schools in Dublin provide for them. We cannot think that such a system is one of true medical education, such as the Medical Council contemplates or could recognize. Four years for the medical curriculum is all too little, and it certainly does not mean that students are to divide their time between commerce and medicine. If such a system were pursued in the United States, it would meet with severe criticism from all medical educationists here." Such a system does prevail in the medical and law schools at Washington, D. C.

SIMPLE TREATMENT FOR CORYZA.—Camphor in various forms is frequently recommended for colds in the head, although Dr. George Johnson and others long since indicated the dangers attending the use of concentrated alcoholic solutions. The following method of application is suggested in a Swiss pharmaceutical journal, and certainly has the merit of simplicity: A jug is half-filled with boiling water, into which a teaspoonful of well-powdered camphor is thrown. A funnel-shaped paper cap is then placed on top of the jug, and a hole torn in it just fitting the nose. The camphorated steam is inhaled through the nose for ten or fifteen minutes, the inhalation being repeated, if required, every four or five hours. If the patient resolutely persists with the inhalation, in spite of its unpleasantness, it is said that three repetitions will always effect a cure, however severe the coryza may be.—*Lancet.*

THE ASCENT OF MAN.—In view of the recent assertion that the upright position of man had something to do with the development of disease, the following note from the *Journal of Comparative Medicine* is interesting: "According to Dr. J. B. Sutton, animals are not free from certain diseases thought to be referable in man to his erect position. One-fourth of the female monkeys dying in the London Zoological Gardens have displacement of the uterus, and the same disease occurs in the lioness, tapir, Cape hunting dog, pigmy hog, antelope, etc., and in domesticated mammals. Two cases of inguinal hernia in monkeys are recorded, and the disease is said to be common in horses."

Obituary.

REUBEN SMITH, M.D.,

NEW YORK.

DR. REUBEN SMITH, one of the best known and most popular physicians on the east side of the city, died on April 4th at his home, No. 305 East Eighteenth Street, after a week's illness, from pneumonia. He was born in Pennsylvania in 1833, and graduated at the Philadelphia Medical College in 1856. Then he came to New York and opened an office in West Twenty-second Street, practising there until the outbreak of the Civil War, when he was appointed as Assistant Surgeon in the Navy. He served throughout the war. He continued in the Navy until 1868, serving with much distinction at different times on the U. S. ships-of-war Supply, Chicopee, Marblehead, and John Adams.

Since retiring from the Navy he has lived in East Eighteenth Street, where he built up a practice which was only limited by his physical inability to attend to it. He never recovered from the disabilities which he received in his country's service, and his early death was without doubt caused by exposure in Norfolk and Charlestown harbors.

SAMUEL W. GROSS, M.D.,

PHILADELPHIA, PA

DR. SAMUEL W. GROSS, the well-known surgeon of Phila delphia, died on April 16th, aged fifty-two years. He was a son of the late Professor Samuel D. Gross, and succeeded him in the chair of surgery in Jefferson College. Dr. Gross was born in Cincinnati, February 4, 1837. He was educated at Shelby College, Ky., and studied medicine in the medical department of the University of Louisville and at Jefferson Medical College. He was graduated in March, 1857, and settled in Philadelphia. He soon made headway in his profession, and became an active member of the College of Physicians, Pathological Society, County Medical Society, and of the State Medical Society of Pennsylvania, and was at one time President of the Association of American Medical Colleges. Dr. Gross was the author of several valuable surgical works, and was a frequent contributor to periodical literature. He enjoyed deservedly a reputation for sound learning and great practical skill.

C. J. B. WILLIAMS, M.D.,

LONDON, ENGLAND.

THE death of Dr. C. J. B. Williams took place at Cannes, on March 24th. Dr. Williams was in his eighty-fourth year. His contributions to the subjects of pulmonary disease and physical diagnosis were of the highest importance, and he was at one time a pioneer in the introduction of exacter methods of research. Not long ago, he published a most entertaining volume of memoirs, containing an account of his own work, and of the progress and changes in medical opinion during his long life.

WILLIAM GIRDNER, M.D.,

GREENVILLE, TENN.

DR. WILLIAM GIRDNER, died at his home, near Greenville, Tenn., on the 14th of this month. He had been in the continuous practice of medicine for more than fifty-five years; he did a large practice, and only retired from it a few months ago. He was eighty-one years of age when he died. He was the father of Dr. John H. Girdner of this city.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, April 4, 1889.

ALFRED L. LOOMIS, M.D., PRESIDENT, IN THE CHAIR.

OIL PORTRAIT OF EX-PRESIDENT ABRAHAM JACOBI, M.D.

AN excellent oil portrait of Dr. Loomis's immediate predecessor in office was presented to the Academy by Dr. August Caillé and some of his colleagues. Dr. Caillé, in his presentation address, spoke in terms of admiration for Dr. Jacobi's personal qualities and high scientific attainments, and trusted that he might live to adorn the profession well into the twentieth century.

DR. LOOMIS, in accepting the gift from the Committee in behalf of the Academy, said it was a fitting tribute to Dr. Jacobi's untiring energy and self-sacrificing devotion to the interests of the Academy, as well as to his valuable scientific work.

DR. T. GAILLARD THOMAS read a paper,

ACUTE MANIA AND MELANCHOLIA OR HYPOCHONDRIASIS AS SEQUELÆ OF GYNECOLOGICAL OPERATIONS.

His object was to place on record what he thought must be rather a remarkable experience as to the occurrence of these conditions. Before speaking to the subject he desired to call attention to the fact that he did not announce these peculiar and alarming states as complications or necessarily results of operative procedure, but merely as sequelæ which might or might not be dependent upon them. He further disclaimed the position that operations performed for the relief of diseases peculiar to women were especially liable to these consequences, but, as all the surgery which he performed was limited to those diseases, he must confine his remarks to that field.

The symptoms of mania in these cases were marked by mental exaltation, violent delusions of an emotional nature, rapid and irregular muscular efforts, usually unattended by disposition to inflict injury upon self or attendant; the eyes were bright and piercing in glance, the tongue red at the edges and furred in the centre, the pulse rapid, the temperature not much elevated, the voice sharp, high-pitched, metallic, the patient talked rapidly and incoherently.

In acute melancholia the patient was less excited, less turbulent, was sad, and more depressed in bearing. She looked gloomy, and often declared her death would occur very soon; at times she became calm, at others she weeped and bemoaned the fact that she was pursued by some nemesis in consequence of some (imaginary) crime.

Dr. Thomas had six cases to relate, out of which four were violent and showed great mental exaltation throughout, while two were melancholic, and after a short time died.

CASE I.—A single woman had, a year before he saw her, noticed an abdominal enlargement which steadily and rapidly increased. During this time she had emaciated much, and when she came under his care was extremely weak and low-spirited, and felt that unless she was relieved very soon she would die of exhaustion. There was a large amount of fluid in the peritoneum, and a tumor occupied the whole of the left side of the abdomen. Although the case was not looked upon as a favorable one, it was determined to operate as the only means of saving life. The patient rallied well after the operation, the pulse kept up to about 100; there was nothing to excite alarm except her extreme nervous depression. She felt certain that she would die. With the exception of this symptom, she appeared to be progressing favorably until the seventh night, when she became more than usually nervous and excitable, and desired to see the priest, who was accordingly sent for. On the eighth day Dr. Thomas saw her and found a great change had come over her during the night. She was wildly maniacal, constantly talked in an incoherent manner, and behaved as a case of puerperal mania. After soothing her for some time he succeeded in getting near enough to feel the pulse, which he found to be 160. She died, in a state of coma, that evening. At the time of this patient's death, eight years ago, he regarded the condition which destroyed life as acute septicæmia, but much experience with septicæmia since then had convinced him that he was in error. This case was by far the most rapid he had ever met, the acute stage being not more than thirty-six or forty hours. An autopsy was not permitted.

CASE II.—Mrs. X—— came under his care on account of severe suffering during the menstrual periods. She was a stout, handsome, healthy-looking woman. Five or six days before the menstrual flow she began to suffer intolerable neuralgic pain in the region of the ovaries. He removed these organs, and she recovered rapidly, but at the end of three weeks a low grade of melancholia developed, and later assumed the form of violent acute mania, with a marked tendency to strike her attendants. She was removed to an insane asylum, returned home at the end of five months, and had remained well since.

CASE III.—A Jewess, aged thirty-six, operated upon for laceration of the perineum. There was nothing unusual until the ninth day, when the sutures were removed. She then became violently maniacal, and it being utterly impossible to control her, a strait-jacket was applied. She raved violently, and after four days fell into a comatose condition and died.

CASE IV.—Multipara, past forty years of age, was operated upon for a badly lacerated cervix uteri. There was nothing unusual until five or six days after the operation, when his assistant told him the patient behaved in a very peculiar manner. On the ninth day she requested a private conversation with Dr. Thomas, at which she confessed a crime committed a few years before. It was told in a manner that he did not doubt it being true until later. She went home for some days, but after two weeks returned to his private hospital, being constantly remorseful because of some supposed crime. She continued this way, growing weaker, and after ten days died, comatose. Incontrollable insomnia was one of the most marked features of this case.

CASE V.—Mrs. C——, aged sixty, was operated upon for a tumor of the breast. Even before the operation she seemed to be a flighty, eccentric person, but after the operation all these symptoms were intensified. She became greatly depressed, was sure she could not live; acute melancholia developed, she cried by the hour, refused to speak, refused all food, had to be sustained by rectal alimentation. She lived about two weeks after the breaking out of the attack, slowly passed into coma, and died. Toward the close of the case the urine became albuminous and presented hyaline casts, but not earlier.

CASE VI.—Operation for cancer of the breast. Before entering his hospital she acted somewhat queer, but mental aberration was not suspected. On the ninth day, after the sutures were removed, she became at times absolutely maniacal. Periods of perfect calm and lucidity of intellect would occur and last for hours. After a time she was allowed to return to her home, with the hope that a change of scene, etc., would prove of benefit, but she had remained violently insane.

There was little literature on this subject. Dr. Ill, of Newark, was first to write on it, and describe some cases. The last two or three years it had been discussed somewhat in Germany, but the entire number of cases on record, including his own, amounted only to twenty-six. In all of his own cases there were distinct prodromal symptoms following the operation, and antedating some days the formal outburst. In none could he discover a hereditary tendency to insanity. It would be noted that four died, one completely recovered, one was still in progress. In all the six excepting one, the urinary secretion was carefully watched and examined, but in none did the kidneys appear to be factors in the mental state. In four

no iodoform was used at all, so that in them iodoform poisoning was not to be considered. In two it was dusted only along the line of cutaneous incision, where absorption would seem almost impossible. Septicæmia was not a factor.

Dr. Thomas propounded the following questions: 1. Were these twenty-six cases of mania and melancholia really due to the operations which immediately antedated them, or did they follow as mere coincident states? 2. Any great mental strain might be followed by mania; was it at all remarkable that in the vast number of gynecological operations performed the last quarter of a century, that twenty-six cases of this malady should have occurred? 3. If the mania which followed operations in the twenty-six cases was the consequence of the operation, how in the future was the tendency to this accident to be avoided? 4. Were the operations in gynecology any more likely than other surgical procedures to disturb the condition of the mind? He would leave the answering of these questions to others.

Dr. J. B. Hunter said he was personally cognizant of several cases; among them were two or three of the more remarkable ones reported by Dr. Thomas. He thought Dr. Thomas was correct if he held the view that gynecological surgery was not more liable to the accident than general surgery. This was evident from a discussion among surgeons at a meeting which he had recently attended. Many there had some cases to relate.

Dr. Hunter thought the cases might be classified as follows: 1. Where the psychosis was due entirely to the operation, whether gynecological or other operation. These cases, he thought, were comparatively few. 2. Cases in which there was a predisposition in the patient to some nervous affection, and in whom the operation served as a torch to light up the disease. 3. Cases in which the patients were already subject to nervous disease, which would have progressed with or without the operation.

He thought Dr. Thomas had not dwelt very much on the time after the operation at which the mental symptoms manifested themselves. In one of his cases, operated upon for an ovarian tumor, the patient went West, and developed mania a year after the operation. The operation might have had some relation to the mania, and it might not.

A fourth class of cases had been alluded to by Dr. Thomas, when he spoke of iodoform poisoning. This class included all cases arising from poisoning, as from iodoform, bichloride of mercury, carbolic acid. One point should be borne in mind, namely, that a very small quantity of iodoform would in some susceptible patients cause acute mania. He thought that ether might develop insanity in patients predisposed to it. Nothing short of incipient insanity should prevent the surgeon from going on to do an operation. Indeed, there were severe nervous affections, as epilepsy, which were sometimes cured by an operation. There was another class of cases which should be mentioned, those in which mental symptoms developed at the menopause, whether this came about naturally, or prematurely by removal of the tubes and ovaries. He thought the cases of nervous or mental affections benefited by gynecological operations outnumbered those brought on by operations.

Dr. Hunter said there might be some relation between the amount of surface exposed in the operation and the mental symptoms. There was greater danger, perhaps, where much surface was exposed, as in operations on the breast or peritoneum. This would especially be expected if the case belonged to the class of iodoform, bichloride, or other form of poisoning, as the drug would be used in larger quantity than where a small surface was exposed.

Dr. Nichols said that the past eleven years, during which he had been President of the Bloomingdale Insane Asylum, they had had but two cases of insanity due to gynecological operations. In one it was stated by the patient's friends that she was operated upon by Dr. Thomas. They said she had suffered from insomnia from childhood; that there was a hereditary tendency to insanity, and she appeared to him to be a person whose mental balance would be easily upset. In this case, and in the other, a fistula in the abdominal wall remained, but caused no material pain or drain on the system. The other patient had been admitted the past month. He was told by her friends that one ovary had been removed. She was suffering from a very grave type of suicidal melancholia. The other patient had paranoia, or primary delusional insanity.

He thought twenty-six cases was a very small part of the entire number of gynecological operations which had been performed, and he had not supposed that such operations were liable to produce any form of insanity, except possibly for the reason that most of those in gynecology were likely to be long contemplated with great doubt by the patient, and because of more severe shock in cases requiring exposure of large surfaces, as of the peritoneum. He had, in fact, been greatly surprised that the long dread of the operation had not caused mental symptoms in many more cases.

Dr. P. F. Mundé had had one case of removal of the ovaries and tubes in which, twenty-four hours after the operation, the patient became so violent that it was necessary to apply a strait-jacket. She recovered. At that time he thought it was a case of septic mania, but he now thought differently. It occurred seven or eight years ago. Iodoform was not used. Recently he had removed an ovarian tumor with a twisted pedicle. The patient was melancholic, and the day after the operation, on being asked a question, pointed to her lips and refused to speak. She did not speak for three or four days. The temperature and pulse remained nearly normal. Iodoform was applied only along the external sutures. Another recent case was that of a patient who, a few hours after operations for complete prolapsus of the uterus, became furiously maniacal, requiring the strait-jacket. The wound healed perfectly. She recovered after having been maniacal a week.

At first he had supposed operations on the ovaries were more likely to be followed by mental disturbance, but he now doubted it. He thought gynecological operations were no more likely to produce mania than were other operations. Long-continued anxiety about the operation would favor mental disturbance subsequently, and prolonged anæsthesia might have something to do with it. He did not believe iodoform had any influence, for he had seen wounds packed with it, yet the patients did not become maniacal.

Dr. William M. Polk said he occupied a position somewhat at variance with that of the other speakers. He thought women were more predisposed to maniacal disturbance after operations, especially operations done upon the genital organs. If he were asked why, he would answer that in his experience women were more emotional, and when one considered the monthly behavior of her genital organs he found it associated with a great many mental disturbances. For this reason he preferred not to operate on women who beforehand showed any abnormal mental action. He had had the misfortune to attend three of these unfortunate people who had developed maniacal symptoms after being operated upon, all of whom died. It was simple mania, and not a condition resulting from absorption of a medicinal substance. The impression produced upon his mind by those cases was one of such dread of possible similar ones that he now refused to operate upon women who showed mental peculiarities or eccentricities. These cases had confirmed him in the opinion that women were more liable to such derangement after operations than were men. During the intervals between menstruation many women showed the clearest judgment, highest degree of business tact, and ability to stand prolonged mental and physical strain; yet during the period of menstrual flow they were utterly incapable of getting along in ordinary domestic affairs,

keeping everything, from cook up, in a state of turmoil, because of inability to control their temper or irritability. It certainly seemed, therefore, that the female sex was more subject to emotional strain than the male, and that fact should be considered before undertaking operations.

Some had thought the mania in these cases was related to the anæsthetic, but that had hardly been proven, since it did not tend to produce the same kind of mania in other subjects. Some thought the perineum in the female was extremely sensitive, and operations upon it were likely to be followed by mania; others that menstruation had to do with the mania. He was prepared to admit that contemplation and dread of the knife a month or six weeks before the operation might tend to disturb the mental balance, but he did not think it would bring about the terrible distress pictured by Dr. Thomas. One of his cases of mania developed after Alexander's operation. An autopsy was made, and septicæmia and central nervous lesion were excluded. The second case was one of supra-pubic hysterectomy. There was no sepsis. This woman had a sister who was a little "queer." The third patient was operated upon for hydro-salpinx, was affected mentally before the operation; this was intensified afterward; a strait-jacket had to be applied; she was fed by the stomach-tube. She died after two weeks.

The more severe the operation, the greater the shock to produce this mental condition; consequently, one should be more careful in choosing subjects for severe operations, especially in women mentally peculiar, or giving a family history of that kind.

Dr. W. Gill Wylie was not prepared yet to express definite ideas on this subject. He certainly was not positive that gynecological operations caused insanity oftener than other operations. But there was one fact in this class of cases which should not be overlooked, namely, that many of the patients operated upon were imperfectly developed. Those who had an imperfectly developed uterus might also have an imperfectly developed brain. He had operated on quite a number of patients who were insane at the time of operating. In one instance the woman had become insane after giving birth to a child. She was considered by different physicians incurable. Dr. Wylie treated her for subinvolution of the uterus and erosion of the cervix. She returned home sane, except during menstruation she showed some of her former symptoms. The birth of another child was followed by insanity. The tubes and ovaries being found diseased, he removed them, and the patient was much benefited in her mental condition, but not entirely cured.

He had had but one case in which acute insanity followed an operation, that being in a patient who had for years suffered from epilepsy of a severe form. She died a raving maniac. He had thought removal of the tubes and ovaries had a tendency to depress patients somewhat, but later observations had shaken that belief.

He thought the abnormal condition of the rectum, perhaps also of the colon, which often existed in gynecological patients, had much to do with producing reflex nervous disorders and mental disturbance.

Dr. Franklin Townsend, of Albany, related his case which had been referred to by Dr. Mundé. The patient was operated upon a few months ago for salpingo-oöphorectomy. There was marked hydremia, as proven by microscopical examination of the blood. After the operation there was nothing to portend evil. The flow which so frequently follows removal of the ovaries came on the fourth day, and with it there was marked mental depression. The wound healed by first intention, the bowels moved regularly, the appetite was good, the pulse, however, rapid prior to and after the operation. It had been noted in these cases that temperature was of less importance than a rapid pulse. The evening of the seventh day the patient was somewhat hysterical, and by midnight was markedly so; the next morning she was melancholic, refused to speak, and would take no nourishment. In the afternoon she became maniacal, and had to be placed in the strait-jacket. She died in the night, in coma, apparently from exhaustion. It seemed to him the illy nourished condition of the brain was one cause for the melancholia; when vaso-motor paralysis set in, there was hyperæmia of the brain and mania.

Dr. L. C. Gray thought that to Dr. Thomas belonged the credit of describing a new genus of insanity. He had described six cases, and mentioned twenty-two others. Of the six, three were a type of mania, three a type of melancholia, but not one of the three of mania was of the types commonly recognized. There was an idiopathic form of acute mania in which the patient became violent, but not uncontrollable; there was an acute form described as *delirium grave*, probably a cerebritis. The six cases which Dr. Thomas had described belonged to the latter class. This would seem to show that there must be some general underlying condition following the gynecological operation which led to all. If there had been a special tendency in the individuals, it seemed to him so many would not have shown a wild form of insanity. In Dr. Thomas's cases the insanity came on a certain period after the operation, and it seemed to be a symptom pertaining to a general disease, either drug poisoning, or microchemical product in the blood, rather than the result of reflex action. It seemed this form of insanity belonged to what had been called post-febrile insanity. Some cases of the latter were of mania, some of melancholia, some mixed, but all the cases of post-febrile insanity so far described had shown great lucidity of the delusions throughout, and a good prognosis. But four of Dr. Thomas's cases had died. There was no such percentage of deaths in ordinary forms of post-febrile insanity, nor in acute mania, nor in ordinary cases of melancholia; there was, however, in *delirium grave*. The only patients with this form who had been cured had taken enormous doses of ergot. He thought that instead of calling the insanity described by Dr. Thomas, mania or melancholia following gynecological operations, it was far better to call it post-operative insanity, which distinguished it from ordinary post-febrile insanity.

The President had had a case in which Dr. Lange had removed the kidney, the patient being perfectly sane until a week or ten days after the operation, when she developed most acute mania. But she recovered, and was then well.

Dr. Thomas said he had little to add in closing the discussion. He would refer to some points which had been brought up, although they were hardly relevant to the subject. If iodoform possessed the disadvantage of ever producing such grave results as had been described during the evening, it seemed to him that the advantages which pertained to it hardly warranted its use. He was in the habit of sprinkling a little iodoform along the line of sutures which closely coaptated the edges of the external abdominal wound in laparotomy, yet he was not prepared to deny Dr. Hunter's position, that even under those circumstances the iodoform might cause poisoning. He had had some cases of insanity lasting three or four days, due to iodoform poisoning, but had not mentioned them in the paper.

With regard to ether, he did not believe, after a very large experience with it, that in his hands it had ever produced insanity. But he would wander from the subject long enough to say that he had seen such bad results from ether, in the way of prolonged vomiting and general discomfort, that he was strongly inclined to believe American surgeons should follow the example of their European brethren, and use chloroform instead of ether in laparotomies.

It would seem that the cases under discussion were by no means as rare as a reference to the literature would indicate. At this discussion twelve additional cases had been recorded, making thirty-eight. One was his own, mentioned by Dr. Nichols, which he had then for the first time heard of. Dr. Nichols's remark on the evil influence of anticipating the operation had interested him very

much. It seemed to him a wonder that more women with, for instance, tumors of the breast, in going from doctor to doctor, and getting conflicting opinions, did not become crazy. For that reason he had taught students always to remove tumors of the breast, of whatever nature and of whatever size. In writing his paper he said he had gone according to no author, but simply tried to give a word photograph of his own cases. He might say that his own mind was not made up. He hoped the paper would lead to the report of other cases, and that others might be able to answer the questions with which he had closed his paper.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, February 13, 1889.

WM. P. NORTHRUP, M.D., PRESIDENT, IN THE CHAIR.

DR. JOHN S. ELY presented the

REPORT OF THE COMMITTEE ON MICROSCOPY

on the specimen referred to the committee by Dr. Boldt on January 23d. The tumor presented the structure characteristic of the papillary form of cyst adenoma of the ovary.

DR. FREDERICK S. SELLEW presented a specimen showing

CROUPOUS COLITIS,

occurring in a child aged three and one-half years, who was suffering from pharyngeal diphtheria. The general condition of the child was poor, and she was suffering with whooping-cough when taken with diphtheria.

The membrane covered the surface of the tonsils and pharynx. There was no dyspnœa. The coughing was severe, and an extensive double pneumonia developed a few days before death, and was the cause of death. The child lived about ten days after the onset of the diphtheria, and during a greater portion of this time there was diarrhœa, more or less profuse, but there was no pain, no blood, and no tenesmus.

Autopsy.—The child was poorly nourished and emaciated. The tonsils were enlarged with dilated crypts containing grayish mucus and granular matter. Pseudo-membrane was present on the surface of the tonsils and on the pharynx. The larynx and trachea were normal. There was broncho-pneumonia at the base of both lungs posteriorly, and emphysema anteriorly. The bronchial glands were enlarged, but not cheesy. The stomach and small intestine were normal. To the mucous membrane of the colon, from the anus to the cæcum, there was adhering a flocculent pseudo-membrane, gradually decreasing in quantity from below upward. A croupous inflammation of entire colon existed. Sections of the intestines were examined microscopically by Dr. Northrup, and found to present the usual lesion of croupous inflammation. The spleen, kidneys, and liver were normal.

This case was of interest, Dr. Sellew said, on account of the infrequency of croupous inflammation of the intestines. Dr. Northrup had found the condition but once in over 1,500 autopsies. He had never found it occurring in the small intestines. Weissenfels and Freund have collected records of 103 cases, and in but four of these was the inflammation confined to the small intestine only. In a recent number of the *Medical News*, Dr. B. K. Rachford, of Cincinnati, explains the infrequency of intestinal diphtheria by the theory that the diphtheritic germ is dependent, to a great degree, upon oxygen for its existence. He believes that the presence of the diphtheritic exudate in the intestine is dependent upon some pathological condition of the intestinal tract which would furnish oxygen, either in the free state or in some unstable combination, which could be utilized by the germ for its growth. Such an unstable compound exists in the oxyhæmoglobin of the blood—the congested and eroded mucous membrane being the pathological condition which would bring the germ in contact with this body, from which it would derive its oxygen.

DR. L. EMMET HOLT asked whether it were necessary to regard the colitis as a diphtheritic affection. Might there not be a diphtheria of the larynx and pharynx with, at the same time, a non-specific croupous colitis, occurring coincidently but independently of the former?

THE PRESIDENT said that in this case the local lesions in the pharynx, larynx, and colon resembled each other very closely, and though he was not prepared to assert positively that they were identical, yet he believed that they would prove so to be. He had seen a diphtheritic membrane in the stomach, but had never seen but one other instance of croupous colitis. He had had two cases of colitis occurring at the same time, both of which he supposed to be membranous; one of them, however, turned out to be a simple catarrhal inflammation.

DR. LOCKWOOD asked whether any bichloride of mercury had been used, either locally or internally, in the treatment of this case.

THE PRESIDENT replied that it had not. The throat symptoms, indeed, had been not at all pronounced. If it were true that the lesions of diphtheria were due to the presence of an aërobic micro-organism, the occurrence of intestinal diphtheria might be explained by the entrance of the microbe through the anus, the lesions in such a case being most marked in the parts nearest the anus, and decreasing gradually in proportion to the distance from this point.

DR. R. G. FREEMAN presented a number of gross and microscopical specimens of

ECHINOCOCCUS CYSTS OF THE LIVER,

removed from the body of a Sicilian woman, forty-four years of age, resident three years in the United States, who died at Roosevelt Hospital, last January, with symptoms of cardiac and nephritic disease.

Autopsy.—There were evidences of pneumonia, heart disease, mitral stenosis, congested spleen, chronic diffuse nephritis, and chronic gastritis. The liver was cirrhotic, and in it were two communicating spheroidal cysts. These cysts were close to the base of the gall-bladder, and at one point the larger cyst was separated from the anterior surface of the liver only by a connective-tissue membrane which presented the appearance of a cicatricial depression. The smaller one was more deeply seated. The diameter of the larger cyst was six centimetres; of the smaller, four and one-half centimetres. They were filled with a pultaceous yellow material, which on gross examination showed larger and smaller translucent masses scattered through it. The translucent masses proved, on microscopic examination, to be the characteristic lamellated echinococcus cyst membrane. On examining the yellow material a few hooklets were found. There was much granular matter, some fat-globules, yellow and red pigmented particles, cholesterin crystals, and lime salts. The translucent masses were made up of two distinct sorts of membrane, both, however, exhibiting the characteristic lamellated structure: 1, pieces of thick membrane consisting of several layers, that on one surface being white, the other yellow; 2, complete daughter cysts. The thick pieces of membrane the speaker took to be portions of the mother-bladder; some pieces presented both surfaces plain, but in others there were numerous projections from the white surface which had the appearance of brood capsules. They were translucent, and conical in shape, and a thicker streak passed from the apex to the middle of the base. On microscopic examination they appeared to be an outgrowth from the lamellated layer of the membrane, the lamellæ curving out as they reached this point; they contained no cavity; the darker streak through the middle consisted of lime salts. These, then, if they were rudimentary brood capsules, were sterile and had undergone calcareous degeneration. Just such a structure as this, Dr. Freeman said, he had been unable to find described or illustrated, although sterile cysts are

mentioned. The daughter cysts varied in diameter from fifty millimetres to four centimetres. Seventy-five daughter cysts were isolated, this being probably about two-thirds of the whole number present. Some of those examined were sterile; others contained scolices and hooklets. Some contained granddaughter cysts, and in one there was a granddaughter cyst which contained three great-granddaughter cysts. The scolices were found in all stages of degeneration, in the later stages nothing remaining but a pile of lime corpuscles and hooklets. Lining the cyst cavity outside of all was a dense connective-tissue membrane.

The cyst contents were preserved in a saturated aqueous solution of chloroform on the suggestion of Dr. Prudden. This chloroform water had proved a very good preserving fluid, no organism having grown in it, nor had it had any distorting influence on the specimens.

The speaker thought the specimens worthy of presentation, first on account of the very complete exhibition of the life-history of an echinococcus cyst which they afforded, and secondly on account of these peculiar papillary outgrowths.

The specimens presented were: 1, spleen; 2, liver with connective-tissue membrane; 3, membrane with papilla fresh; 4, membrane with papilla hardened, cut, and stained; 5, a cyst hardened, cut, and stained; 6, fresh cysts showing contents.

Dr. H. P. Loomis presented

A LARYNX AND THREE LARGE PIECES OF MEAT,

illustrating one of the more rare causes of sudden death. A man, who was intoxicated, entered a restaurant, and began to eat, but suddenly choked and fell over dead. At the autopsy, made by Deputy Coroner Jenkins, three large pieces of meat were found in the throat, one of them completely occluding the glottis. In the records of the coroner's office are twenty-seven cases of sudden death from a foreign body in the larynx, in two only of which was food the occluding body.

Dr. George R. Lockwood presented two

URIC ACID CALCULI,

which had been passed by a gentleman, forty-four years of age, of good family and personal history. The details of his illness have been previously given (Medical Record, May 24, 1888) in a communication read before the Section in Practice of the New York Academy of Medicine. Briefly they are these: In 1872 the patient had an attack of renal colic on the right side, which passed away, leaving a sense of dull pain and soreness along the course of the ureter for one year. He had no return of the trouble until 1884, when he was taken with pain in the left side, followed by sharp uræmic convulsions and stupor. Recovered at the end of five days, convalescence being established by free diuresis. How much urine passed during this attack was not known. Recovered and remained well till December 27, 1887, though the urine always contained uric acid crystals. On the latter date he was suddenly seized with pain in the left side, and developed convulsions and stupor, the uræmic attack lasting only for several hours. During the first day he passed 12 ounces of urine, containing 46 grains of urea; second day, 18 ounces of urine, with 142 grains of urea; third day, 4½ ounces, with 35 grains of urea; fourth day, 4½ ounces, with 39½ grains of urea; fifth day, 4¾ ounces, with 48½ grains of urea; sixth day, 4¼ ounces, with 31 grains of urea. During this time a slight drowsiness was his only uræmic symptom. No tumor could be detected in the abdomen. On the seventh day he began to make water in large quantities, passing in twenty-four hours 299 ounces, or 18¾ pints, containing 2,401 grains of urea, and during next two days 68 ounces and 88 ounces, respectively. Then he had another attack of renal colic lasting for four hours, and followed by a diuresis of 188 ounces. Three weeks afterward he passed these two uric acid calculi. From this time on his urine became normal. He remained a comparatively well man until, toward the close of September, 1888, he was suddenly seized with convulsions, became comatose, and died.

Autopsy.—The following is the record of the autopsy, which was made by Dr. Ferguson: "Inspection, no œdema; peritoneum normal; pleura, old adhesions both sides; heart normal in size, valves competent, muscular tissue contains small amount of fat; lungs hyperæmic and moderately œdematous in most dependent parts; spleen bound by tough fibrous adhesions to neighboring parts, normal in size, capsule thickened.

"Left kidney is large and lobulated, surface smooth, capsule not adherent. The entire organ swollen and congested. Markings not distinct. Cortex unusually thick. There are small calculi embedded in the substance of the organ, in both the medulla and cortex. Ureter is normal. Microscopic examination shows considerable fibrous tissue in excess of normal, but the most prominent changes are in the parenchyma. Many of the Malpighian tufts are converted into fibrous tissue, many of them converted into fat. The tubules of both the cortex and pyramid, but especially of the cortex, are far advanced in fatty degeneration. Many of these tubes, not yet in the state of fatty degeneration, show their epithelium to be very granular. There are numerous masses of urates in the cortex and pyramids which require the microscope to bring them into view. The straight tubes contain both granular and hyaline casts.

"The location of the right kidney is occupied by a cyst, which is the pelvis of the kidney, limited by a thin rind of cortex less than one-eighth inch in thickness. At a distance of less than one inch from the pelvis the ureter is completely blocked by a calculus one-half by one-fourth inch in size. The ureter below the obstruction is thickened, its lumen small, the mucous lining cicatricial. The microscope can hardly distinguish a trace of kidney-tissue in the thin rind of cortex which makes up the wall of the greatly dilated pelvis, which has a capacity of four and one-half ounces. Liver large and fatty; stomach and pancreas normal; adrenals, cortices fatty, the fat being distributed in circumscribed masses which stand out in marked contrast to the healthy portion of the organ; bladder, mucous membrane lined by fine calculi, otherwise normal; brain, convolutions over cortex slightly atrophied, brain moderately congested."

There are four points of interest, Dr. Lockwood said, about the case:

"1. Anuria following impaction of a renal calculus, if lasting more than a few hours, signifies destruction of the kidney. The other kidney may be congenitally absent, but, as a rule, it is atrophied by occlusion of its ureter by a previously impacted calculus. We cannot understand a simple inhibitory reflex lasting so long.

"2. Anuria induced in this way is, as a rule, accompanied by slight uræmic symptoms. This is of importance in differentiating obstructive from non-obstructive anuria.

"3. The case throws light upon the origin of hydro nephrosis. Many of the text-books make the assertion that a hydro-nephrosis is due to a sudden and complete stoppage of the ureter: The kidney is secreting urine, the ureter becomes blocked, the urine still continuing to be secreted, dilates the pelvis of the kidney. That this statement is erroneous I think can be proved by the following facts: *a.* When the ureter is submitted to a back pressure of 2.4 inches of mercury this pressure equalizes the blood-pressure in the Malpighian tuft and further secretion is stopped. This pressure is exerted in a healthy kidney by ʒ ij.–iv. of urine. *b.* The pelvis and ureter are not to be distended easily. The ureter will stand a pressure of five feet of mercury. Only one-half ounce of fluid can be injected into the cut ureter and pelvis, any extra force used only drives the surplus out through the renal vein. *c.* As regards autopsies, this case is the only one to my knowledge in which an autopsy has been made after the dislodgement of a calculus that had produced such an anuria. It is valuable, then, for this. The left pelvis and ureter were normal. A num-

ber of autopsies have been recorded where a calculus remained impacted. In these the kidney was atrophied, and the pelvis contained only an ounce or so of fluid.

"4. The diuresis, then, must have been due (*a*) to the diuretic effects of retained urea; (*b*) to a vaso motor dilatation of the renal vessels, following the withdrawal of back pressure when the calculus became dislodged, without compensating vaso-motor dilatation elsewhere."

DR. JOHN S. ELY said that in some cases of hydronephrosis reported by Morris there was a valve-like arrangement causing not a total but a partial occlusion of the ureter, and existing for a long period of time. The condition has also been found in other cases of partial occlusion such as would result from the impaction of a mulberry calculus.

(To be continued.)

Correspondence.

ACUTE MANIA AFTER OPERATIONS.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In the discussion that followed the reading at the Academy, on the evening of April 4th, of Dr. Thomas' paper on "Acute Mania and Hypochondriasis after Gynecological Operations," it is very remarkable that no one pointed out the identity of the cases described with those which have long been known as cases of "traumatic delirium." This affection was first described by Dupuytren under the name of "délire nerveux,"[1] was accepted as an idiopathic nervous delirium by Nélaton, in 1844,[2] and distinguished from the delirium tremens it so greatly resembles by Follin and Duplay, in 1874.[3] During the last twenty years, however, French surgeons have tended to identify "traumatic nervous delirium" with true delirium tremens, or, at least, to affirm that it only occurs in persons habituated to alcoholism before the occurrence of the wound or the operation; that it has, therefore, much the same pathological significance as the excessive delirium in the pneumonia of drunkards, and like it demands treatment by alcohol and opium. I have heard the late French surgeon Gosselin insist on this view in his clinical lectures at La Charité. The identity of the traumatic delirium with delirium tremens was formally advocated in a celebrated essay by Rose,[4] incorporated in Billroth and Luecke's "Surgery." Rose proposes to call the delirium observed after operations in persons habituated to alcohol "chronic delirium tremens," because it belongs, not to an acute alcoholic debauch, but, on the contrary, to a period of enforced abstinence from liquor in a person whose nervous system has become depraved by continued alcoholic excess, and is therefore unable to bear either shock, loss of blood, or suppuration.[5] Koenig, writing in the same sense, entirely accepts the doctrine of the identity of traumatic delirium and delirium tremens.[6] He claims that the liability to at least some degree of delirium may be incurred not only by habitual drunkards, but by men who had merely been in the habit of taking an ordinary amount of beer or wine without ever becoming intoxicated.[7] On the other hand, Dr. William Hunt, in the "International Cyclopædia for Surgery," admits the existence of traumatic delirium as distinct from the delirium tremens which still more frequently complicates wounds and operations.[1] To the non-alcoholic form of delirium many causes are attributed, especially anything which affects the quality or quantity of the blood. Hence the most prominent cause of afebrile traumatic delirium is hemorrhage; of febrile delirium, septicæmia. An interesting form of operative delirium has been observed after one especial operation—cataract extraction—upon old people, all over sixty.[2] Sichel, as quoted by Schmidt Rimpler, has seen seven or eight cases whose only cause seemed to have been the closure of the eyelids after the operation. Such patients are, so to say, "dépaysés"—they do not know where they are—they get up to go home. Their speech becomes incoherent, they wander about their room, tear off their bandages, and insult their attendants. They are free from fever, and, apart from the delirium, exhibit no trace of cerebral congestion or inflammation.[3]

Several similar cases are quoted by Schmidt Rimpler from other authors.[4] The writer observes that on the whole this delirium of the "dark room" belongs to the delirium nervosum of Dupuytren. He will not admit, with Rose, that all cases of traumatic delirium are to be referred to the delirium tremens potatorum, or to febrile, or to inanition delirium.[5] The special cause of excitation after the cataract operation, where the effect of hemorrhage and of pain must both be excluded, is the suddenly complete privation of sight by means of the bandage. The brain is thus deprived of the regulating, even inhibitory influence, of the sense of vision, and abandoned to its easily disordered spontaneous impulses.[6]

Without pursuing the subject further, it is evident that the cases described by Dr. Thomas are neither peculiar to women nor to gynecological operations, nor do they, however interesting as additional clinical data, represent any new class in medicine. They belong to a class of which some forms were formally described by Dupuytren in 1839, or were observed in his clinic in 1827, and which have since claimed a descriptive chapter in all systematic treatises on general surgery. The interesting questions suggested by these cases are: 1. Whether the delirium is at all, or mainly to be, attributed to moral causes—preoccupation, apprehension, hysterical excitability? 2. Whether, when septicæmia can be excluded, the delirium must necessarily be attributed to avowed or concealed habits of alcoholism? 3. What organic substratum existed for the delirium? a question particularly urgent in regard to the fatal cases.

Of the seven cases reported by Hélis from Dupuytren's clinic,[7] observed between 1812 and 1817, five recovered and two died. But both the deaths seemed to result only indirectly from the delirium, which led the patient in the first case (strangulated hernia) to tear his intestines until he succumbed to an acute peritonitis; while in the second case (operation for popliteal aneurism) the delirium, which broke out on the fifth day, subsided, but the patient died on the fortieth day, after repeated hemorrhages.

Of the other cases the first was operated for sarcocele. The patient, who had been much tormented by fear of hemorrhage, began, on the day after the operation, to be greatly agitated; complained of pains in limbs and chest, and then fell into raving delirium. The eyes were brilliant, the pupils motionless, the respiration accelerated, the face covered with sweat, the pulse remaining calm and regular in the midst of the disturbance. The delir-

[1] Hélis: Observation sur une espèce particulière de délire traumatique dans la clinique de Dupuytren, Archives gén., 1827. Dupuytren: Leçons orales. 1839.

[2] Pathologie chirurgicale. Paris, 1844.

[3] Traité élémentaire de Pathologie externe. Paris, 1874.

[4] Delirium Tremens und Delirium Traumaticum, Deutsche Chirurgie, Billroth und Luecke. Stuttgart, 1885.

[5] "Es ist der Delirium Traumaticum eine form des Delirium Tremens, wie sie wohl fast ausschliesslich bei Verwundungen vorkommt," loc. cit.

[6] Lehrbuch der Allgemeinen Chirurgie, Zweite Abtheilung, p 222. Berlin, 1885.

[7] "Und doch haben sie weiter nichts gethan, als täglich einige Schoppen Bier, resp. einige Gläser Wein consumirt," loc. cit.

[1] Loc. cit., Ashhurst, vol. i., p. 381.

[2] Rimpler, Schmidt: Archiv für Psychiatrie, Bd. ix., 1879, Delirien nach Verschluss de Augen und in deunkel-zimmern.

[3] Annal. d'Oculistique, 7, 49, p. 154, Sur une espèce particulière de délire sénile qui survient quelquefois après l'extraction de la cataracte.

[4] Lanné: Gaz. des Hôp., No. 57, Du délire consécutif à l'opération de la cataracte. Magne: Bullet. de Thérapeut.; u. Canstatt: Jahresbericht, 1863.

[5] Loc. cit., p. 238.

[6] Certain researches of Langendorff's on frogs are quoted to show this regulating influence of the sense of vision, Archiv für Anatomie und Physiologie, 1877, Heft iv. u. v. s. 435.

[7] One case from the wards of M. Pelletan.

ium was rapidly dissipated by an enema with six drops of laudanum.

Such a transitory affection, so easily cured, in a person predisposed to anxiety about his operation, justly deserves the title of "nervous delirium."

The second case was very similar. The operation, a dislocation of the femur; the patient much frightened by the apparatus employed for reduction, and unable to believe that he was so soon cured; the delirium, again with the cool skin and quiet pulse, occurred on the evening of the same day, but was arrested by an enema with ten drops of laudanum.

In the third case the patient had a fractured rib; the delirium began on the third day after the accident, and was accompanied by great bodily agitation, so that the muscles were in a state of continual tension. Venesection gave no relief. Two successive enemata with ten or twenty drops of laudanum equally failed; but a third, with forty drops, was perfectly successful. The patient, however, had contracted a pleuro-pneumonia during his delirium, from which he only imperfectly recovered.

In the fourth case the patient, while intoxicated, had attempted suicide by cutting his throat. On the second day after the wound was dressed delirium occurred, violent enough to necessitate a strait-jacket. The patient was at first calmed by small doses of laudanum, but from the local irritation the wound assumed a morbid appearance, and on the seventh day the delirium reappeared. It was, however, again treated successfully, and the patient left the hospital cured on the fiftieth day. In this case two alleged causes of traumatic delirium coincide—moral instability preceding the accidents; and alcoholism, not, however, evidently chronic.

The fifth case resembles the last, except in the sex of the patient—who was a woman—and in the absence of alcoholic antecedents. Suspected of theft, this patient had tried in her despair to cut her own throat. She was seized with a violent delirium which lasted ten days, without fever or inflammatory symptoms. The delirium was cured by anodynes, but the wound did not cicatrize until the fortieth day.

Upon these cases M. Hélis makes the following reflections:

"Nervous, pusillanimous individuals, those whose brain had been previously agitated by sudden resolutions, are the most exposed to this delirium; thus it is very frequent after attempts at suicide, so much so that some persons have pretended it was peculiar to them. Athletic individuals are not exempt. It has not been observed among children, and women are much less liable to it than men; probably because their courage is usually more tranquil, more deliberate, for the operations to which they are about to submit."[1]

Hunt, on the contrary, states that children are particularly liable to this delirium, but he gives no proof of the assertion, which seems improbable.[2] Nélaton[3] quotes from Dupuytren the following description, which he indorses as true to nature, without adding anything of his own:

"If, the evening, the next day, or the second day after a fracture, dislocation, attempt at suicide, or any operation, the patient begins to talk with an unnatural gayety; if he speaks much, if his eyes be animated, his phrases abrupt, his movements jerky or involuntary; if he affect a courage and a resolution henceforth superfluous, be on your guard. Soon will be manifested a singular confusion of ideas in regard to persons, places, and things; the patient, a prey to insomnia, is usually dominated by some fixed idea; he is abandoned to a continual jactitation. The upper parts of his body are bathed in sweat; his eyes become brilliant, injected; the face animated, crimson; and with an extraordinary loquacity he shouts out menacing words and frightful vociferations. He becomes insensible to pain, and tears his wounds. . . . But, in spite of the apparent gravity of the symptoms, the pulse is calm and tranquil, and there is no fever. The bowels and kidneys function well; but there is complete anorexia, and, after two, four, or five days, the affection may terminate in death, though much more frequently by recovery."[1] To this description Nélaton adds the remark that, in the few cases where an autopsy had been obtained, no alteration had been found of brain, cord, or, indeed, of any organ. In 1874 Follin and Duplay repeated the same remark.

The diagnosis is made with delirium tremens, with which the nervous delirium is admitted to have much analogy. But, besides the fact that the former follows upon alcoholic excesses—the latter only upon a wound or operation—the traumatic delirium does not present the same uncertainty of voice, trembling of lips, complete loss of equilibrium.

Thus the earlier observers took no account of the possibility upon which Rose laid such stress, of an outbreak of delirium tremens as a manifestation of chronic alcoholism; as a consequence of nervous shock and hemorrhage, coinciding with a temporary privation of the daily dose of alcohol. According to Koenig, the latter circumstance may itself suffice, without traumatism, to cause an outbreak of delirium tremens in a chronic alcoholic. The testimony of other surgeons, and the clinical histories themselves, both contradict the absolute exclusiveness of the Rose theory, however frequently this may be justified. Among the six cases related in Dr. Thomas' paper, all women, and only one among them a public hospital case, the theory of alcoholism would seem highly improbable, though perhaps not absolutely impossible. Verneuil has called such cases "internal septicæmia;"[2] but of a septic process there is really no proof in at least many cases, though undoubtedly the records of cases antedating the era of antiseptic surgery probably include as cases of nervous delirium many where the cerebral excitement was simply an expression of blood-poisoning.

The most comprehensive statement of the matter seems to be that, when the resistance of the brain has been seriously lowered by one or more of several conditions, the conditions incident to a surgical operation are sufficient to throw it into a state of exhaustion. This state is manifested first by maniacal excitement, which may either subside or pass into coma. In the latter case death is usually inevitable.

The most frequent antecedent predisposing cause seems to be, unquestionably, chronic alcoholism; and Rose has had forty severe cases where he believes this etiological factor to have been proved. But after this comes hereditary predisposition to insanity (neurotic constitutions), powerful emotions, depressed nutrition, especially if pushed to inanition; finally, old age. The second of these non-alcoholic predisposing causes seems to have existed in two of Dr. Thomas' cases, both of whom were noted as "eccentric" before the operation. The operative conditions which may exhaust a thus predisposed brain are: 1. Pain, now eliminated during the operation, but which in Dupuytren's time must have been a terrible factor, and which may still be influential when existing after the operation. 2. Hemorrhage. This, again, is to-day largely eliminated, and is, as well known, often most trifling even in the capital operations of laparotomy. On the other hand, it may be quite profuse in the minor operations on the cervix and perineum. One of Dr. Thomas' six cases was a perineorrhaphy. There remains, 3, a condition which I have never seen mentioned but which I venture to suggest as one which must almost necessarily occur in abdominal, possibly also in uterine and perineal operations—I mean, dilatation of the blood-vessels of the abdomen from reflex inhibition of the splanchnic nerve. It is well known to physiologists that section of the splanchnic nerve is followed by such a dilatation of the abdominal blood-vessels as to greatly

[1] Loc. cit., p. 435. [2] Loc. cit., p. 385. [3] Loc. cit., p. 140.

[1] Quoted from Dupuytren: Leçons orales de Clinique chirurgicale, 3d edit., 1839, t. ii., p. 231.

[2] Quoted by Rose, loc. cit., p. 110.]

lower the tension and increase the rapidity of the radial pulse. In the cases cited by Dr. Thomas, contrary to the observations of earlier writers, the pulse is said to have been rapid; the tension is not described. The lowering of the tension, and consequent compressible amplitude of the pulse regularly occurs in the forming stage of general peritonitis.[1] By the paralytic dilatation of the abdominal blood-vessels it is possible, in animals at least, to withdraw so much blood into the abdominal circulation that the animal may be said to "bleed into his own veins." The circulation of the cerebro-spinal axis is correlatively endangered, and its nutrition impaired as by hemorrhage.

It is here suggested that this condition may therefore suffice to temporarily exhaust a predisposed brain, as a hemorrhage could admittedly do if it had taken place.

The case quoted by Dr. Loomis, of a three weeks' mania after extirpation of a kidney, with the necessary profound traumatism of the renal plexus, and hence shock to the splanchnic fibres entering it, would admirably illustrate this view.

In accordance with it, the impairment to the nutrition of the brain, though sufficient to cause severe functional disturbance, might nevertheless be transitory and easily overcome by opium. Or, on the other hand, beginning as in true delirium tremens with such purely functional disturbance, it might, as in an unquestioned case of that affection, proceed to complete nutritive exhaustion and arrest not only the intellectual functions, but the vital functions of the medulla in regard to the heart and respiration. Hence the terminal symptoms of stupor and coma, followed by death.

Delirium tremens potatorum may end fatally without gross lesion of the brain, unless, indeed, this has already been produced by chronic alcoholism; or, at the most, with passive congestion and increased serosity in the ventricles and nerve-tissue. Even the non-traumatic and non-alcoholic delirium acutum may be unattended by appreciable brain lesion, although usually abundant evidence of either active or passive hyperæmia is found.[2] But Fürstner[3] describes three cases of acute delirium, two fatal, and where in the latter even a microscopic examination of the brain discovered nothing abnormal.[4] Thus it is certain that death may result from a temporary functional exhaustion of the brain centres, as it may from their sudden exhaustion in shock, or in the presence of intracranial tumors.

In one of Dr. Thomas' cases the result was not death, but insanity of some duration, recalling an analogy with puerperal mania. Each case may offer individual peculiarities of lesion, as of absence of lesion, and a temporary arterial anæmia of the brain constantly tends, as in the pseudo-hydrocephalus of Marshall Hall, to determine venous hyperæmia as a secondary result.[5]

MARY PUTNAM-JACOBI, M.D.

HOW TO SEND MANUSCRIPTS.—The best way to send manuscripts is in a stout envelope long enough to hold commercial note-sheets without folding. A similar envelope, stamped and addressed for return of manuscript, should be enclosed. Before setting out to roll a manuscript always commit suicide.—*The Writer.*

[1] Observations on the Pulse in a Case of Puerperal Peritonitis, M. P.-Jacobi, Brown-Séquard's Archives of Medicine, 1873.

[2] Schull: Klinische Psychiatrie, p. 336, Leipzig, 1886. Spitzka pronounces this delirium to be clearly symptomatic of grave somatic disease of the brain.

[3] Ueber Delirium Acutum, Archiv für Psychiatrie, Bd. xi., p. 518.

[4] There had been violent jactitation in the three cases, and the fibre of the voluntary muscles exhibited a wide diffusion of waxy degeneration.

[5] The poets are often singularly successful in depicting the external aspects of this as of other brain diseases. Weir Mitchell, physician and poet, draws a vivid picture of traumatic delirium in a wounded soldier in his novel "War Time." The case, however, is interpreted as septicæmic. Hunt quotes appropriately a passage from "Rab and his Friends" (written by a physician), where a woman, after amputation of her breast, imagines that she is nursing at it a child who had died forty years before, and in the fancy drifts away into terminal delirium and death.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 7 to April 13, 1889.

BYRNE, CHARLES C., Surgeon, U. S. Army. Promoted Surgeon, with the rank of Lieutenant-Colonel, to rank from March 29, 1889.

MUNN, CURTIS E. Promoted from Assistant Surgeon to Surgeon, with the rank of Major, to rank from March 29, 1889.

BROWN, PAUL R., Captain and Assistant Surgeon. By direction of the President will report in person to Brigadier-General John R. Brooke, President of the Army Retiring Board, at Omaha, Neb., for examination by the Board. Par. 9, S. O. 80, A. G. O., Washington, April 6, 1889.

By direction of the President, the State of Wisconsin is transferred from the Department of the East to the Department of Dakota. G. O. 36, A. G. O., Washington, April 6, 1889.

Official List of Changes in the Meaical Corps of the Unitea States Navy for the week ending April 13, 1889.

HEFFENGER, A. C., Passed Assistant Surgeon. Found unfit for duty at present, by Retiring Board, but not permanently incapacitated for active service, and granted one year's leave of absence for medical treatment.

DUBOSE, W. R., Passed Assistant Surgeon. Detached from the U. S. S. Constellation and ordered to the Practice Ship Jamestown.

LOWNDES, C. H. T. Commissioned an Assistant Surgeon in the U. S. Navy, March 13, 1889.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending April 13, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	14	0
Scarlet fever	492	50
Cerebro-spinal meningitis	1	0
Measles	220	19
Diphtheria	220	64
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

ONLY TOO TRUE.—"What is the matter, doctor?" asked a reporter of a well-known chemist. "I am mad; mad at chemistry and the drug business. Look here! Oil of vitriol is no oil, neither are oils of turpentine and kerosene. Copperas is an iron compound and contains no copper. Salts of lemon is the extremely poisonous oxalic acid. Carbolic acid is not an acid, but an alcohol. Cobalt contains none of that metal, but arsenic. Soda-water has no trace of soda, and sugar of lead has no sugar; cream of tartar has nothing of cream, nor milk of lime any milk. Oxygen means the acid-maker, but hydrogen is the essential element of all acids, and may contain no oxygen. German-silver has no silver, and black-lead no lead. Mosaic gold is only a sulphide of tin. These are only some of the mistakes of pomenclature in our business."—*Medical Herald.*

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Original Articles.

LAPAROTOMY FOR PERFORATION OF THE APPENDIX VERMIFORMIS FIFTEEN HOURS AFTER THE ONSET OF THE ACUTE SYMPTOMS; RECOVERY.

BY ROBERT F. WEIR, M.D.,

SURGEON TO THE NEW YORK HOSPITAL, ETC.

THE following case has several points of interest, which are, first, the earliness and success of the operation; second, the ample proof that it affords of the intraperitoneal nature of the exudations and abscesses that follow a perforated appendix; a spreading peritonitis; third, the fact that antecedent attacks did not ward off, as Mackenzie states they do, by previous limiting exudations, and, fourth, the uselessness of Treves's advice to cover over by peritoneum the cut end of the appendix where removed. The history of the case is this:

Dr. F. A. L——, thirty-four years of age; family history excellent; has had the usual diseases of childhood, but, with the exception of a short attack of intermittent fever six years ago, has always enjoyed a most robust and perfect health; never suffered from any form of dyspepsia or constipation, the bowels moving with regularity every morning. September 26, 1888, complained of general malaise and anorexia; pulse, 90 and temperature, 100° F. During the night there was quite severe abdominal colic, and, with the expectation of being able to relieve this, a long rectal tube was passed, but no flatus escaped. A warm enema was then taken and a slight amount of fæces expelled, but without the result of giving any relief. In the morning there was localized tenderness and some pain in the right iliac fossa and a small tumefaction. Pulse, 100; temperature, 100.5° F. A little later in the day, the colic not having abated and there being a desire to defecate, patient seated himself at stool, and during an effort of straining, not however very powerful, sudden intense pain was felt in the region mentioned, accompanied by immediate sinking sensations, very marked pallor, and copious clammy perspiration. The patient was moved back to bed, a hypodermatic injection of brandy made, hot-water bottles applied, and in a short time he rallied. Morphia was administered by Dr. Henna, who was in attendance, as was required to relieve pain, and hot applications were made to the right iliac region. For three days the temperature was slightly elevated, 100.6° F. being the maximum point, and the tumefaction increased somewhat in size. After that time, for three weeks there was no rise of pulse or temperature, and the tumor gradually diminished to about the dimensions of a hickory-nut.

The patient then continued about his business until October 31st, exactly two weeks after going out, when he was again seized with colic, local tenderness in the right iliac fossa as before, and a rapidly increasing swelling. There were no febrile symptoms. Treatment as before. In a few days the swelling again commenced to subside and after two weeks in bed patient commenced to move about the house.

The foregoing account was furnished by the patient himself.

I saw him first, with Drs. Janeway and Henna, November 22d, and found in the iliac fossa a mass the size of an egg, which however was a diminishing one, and was without fever or abdominal symptoms. This was the recrudescence of his third attack. Advised rest only. About six days later, he not having got out of bed, an aggravation of pain and swelling took place—so much so that the next day was appointed for an exploratory incision; the symptoms by that time, however, ameliorated, and the operation was postponed. He remained in bed some ten days longer, and the swelling then having nearly subsided he got up, and a week later commenced going about, feeling quite restored. On December 23d a medical friend in the country examined him, and could scarcely feel anything in the fossa. On December 25th, after eating quite heartily the day before, he was seized in the morning with a very sharp pain in the right iliac region, more severe and more extensive than on any of the previous occasions, and this was followed by a slight chill, with temperature 100° F. and rapid pulse and vomiting. The latter recurred several times during the day. I was notified on the afternoon of this attack, and made an appointment to see him early the next morning with Dr. Henna, his physician. At 11.30 P.M. the same evening Dr. Henna reported him as no better, requiring larger doses of morphine to quiet him, and the vomiting as persisting though not frequent. I saw him at once, and found great tenderness over the right side, not extending, however, beyond median line; slight but marked dulness was revealed by the moderate percussion permitted; advised etherization for examination and for an explorative operation if that should be thought best.

Under ether a mass the size of a hen's egg was recognized just on the line of the anterior superior spine, and under antisepsis and with the aid of Drs. Henna and Abbe, and with Dr. Birmingham carefully giving ether, an incision three to four inches long in the course of the linea semilunaris was made down to the fascia transversalis, and when this was cut through, the peritoneum was recognized only as a mass of grayish fibrous structure, more like a fibro-sarcoma; so much so that this idea came to my mind. On cutting and tearing carefully through this kind of tissue to the depth of an inch at least, the peritoneal cavity was opened above purposely for exploration, and the finger found the mass to extend along brim of pelvis, lifting up vessels, or rather pushing them toward the median line. The limiting line of this exudation, which was then recognized to be altogether intraperitoneal, was torn through along junction of parietal peritoneum on the inside of the incision, and several coils of intestine, thickly plastered over as far as seen with recent lymph, were brought into view. The wound was strongly held apart and its bottom, which was resisting and elastic, almost fluctuating, carefully inspected to determine whether further dissection should be carried deeper or aspiration resorted to. It was then seen that the base of this cavity, which I had cut or torn open, was composed of the cæcum and appendix strongly agglutinated to the surrounding intestines.

The appendix was coiled on itself, and only after a little time was the attached end made out. Its free end was ulcerated through and was embedded in a mass of soft adhesions enclosing a grumous abscess the size of a small hazel-nut. The appendix, some three inches long with a decided mesentery, was tied off about half an inch from the cæcum. The cavity of the wound was then sponged out with a one to five thousand sublimate solution, smeared with powdered iodoform, and packed with iodoform gauze after a large rubber drainage-tube had

been inserted. The edges of the wound were carefully closed save where the tube and gauze emerged. An attempt was made to cover the divided end of the appendix with peritoneum by sutures, but was abandoned as difficult and, after all, unnecessary. Certainly the prolongation it caused would not pay and previous experience in this operation and in extirpation of the gall-bladder had shown that simple ligation was amply sufficient. At the end of the operation, which lasted fifty-five minutes in all, pulse, 91, and the patient's general condition was excellent.

His progress was eminently satisfactory. Temperature was highest the second day, 100° F. Pulse, 90. Very painful spasm of abdominal muscles, due to the sutures made in the muscular planes, was at times experienced. The appendix was much thickened but patulous; its lumen was, however, only the size of a large probe. Its walls were so thickened and elastic as to suggest before opening that fluid was inside, but none was there. The ulcerated opening was at the very tip. No concretion felt or seen at or subsequent to the operation.

The patient made a speedy recovery, and has been free from any uneasy feelings ever since the closure of the wound.

ON SOME OF THE DEFORMITIES OF THE TARSUS IN CONGENITAL EQUINO-VARUS, WITH A DESCRIPTION OF THE EXTERNAL LATERAL-TRACTION APPARATUS.

By NEWTON M. SCHAFFER, M.D.,

ATTENDING SURGEON-IN-CHARGE OF THE NEW YORK ORTHOPÆDIC DISPENSARY AND HOSPITAL; CONSULTING ORTHOPÆDIC SURGEON TO ST. LUKE'S HOSPITAL, NEW YORK.

We are all acquainted with the difficulties that sometimes attend the treatment of many of the apparently simple cases of congenital equino-varus. If we regard these cases from a purely objective stand-point, it seems a not very difficult matter to relieve the deformity. The resisting gastrocnemius muscle and the tense plantar fascia offer a well-defined and definitely located resistance to the reduction of the deformity; and our prognosis is too frequently based upon these easily determined elements of resistance, coupled with the degree of mobility that may exist at the ankle and tarsus. But a long record of failures points to the fact that there are some elements of resistance in these cases which cannot always be easily determined—elements which are beyond the reach of ordinary diagnostic measures, and which have not always been removed by even the most radical operative procedures.

My studies in this interesting field have led me to seek a remedy for some of the difficulties that present in congenital equino-varus which will insure more uniform and better results; for I feel that all of the cases of this class, if treated before the age of puberty, should recover with straight feet, and I have felt for the past fifteen years that, if a properly applied force could be utilized in these cases, very few, if any, would require operative treatment. In brief, I feel that while much ingenuity has been expended in devising and in perfecting the various cutting methods of treatment, the apparently simple, but really more difficult, mechanical methods which promise so much better results have been in many cases neglected.

It also strikes me that, as orthopædic surgeons, we take too much for granted—that there is not enough original research and study among those who practise orthopædy. The anatomy, both normal and pathological, as well as the mechanics of the articulations, claim more of our attention than has been devoted to them. The surgical aspects of chronic deformities are, as we all know, so well taught, that it is easy enough to apply the knife, the saw, the chisel, or the osteoclast, if we have occasion to use them. But who is there among us who has completely mastered the subject of the mechanics of the articulations? I cannot help thinking that the next generation of orthopædic surgeons will do less operating than is now practised, and that the much-neglected subject of applied mechanics will receive the attention it demands.

There is one popular fallacy in the pathological anatomy of congenital equino-varus that has not received the attention it deserves.

We are taught that there is no lateral motion at the ankle-joint; that the articulation between the inferior articulatory surfaces of the tibia and fibula and the superior and lateral articulatory surfaces of the astragalus permit only antero-posterior motion, except in extreme extension. As a consequence, we have been taught by many eminent teachers that in congenital equino-varus the principal deformity occurs at the articulation of the calcaneus with the cuboid on the outside of the tarsus, and at the articulation of the astragalus with the scaphoid on the inside of the tarsus—these two transverse joints forming the medio-tarsal articulation.

No one, I think, will deny that some of the major deformities that occur in congenital equino-varus depend upon the changed relations of the bones of the tarsus at or below the calcaneo-astragalar articulation, and no one, I think, will doubt that the medio-tarsal joint plays an important part in the deformities of club-foot. But I wish to assert that the deformity or deformities which occur at the medio-tarsal joint are neither the most important nor the most difficult to remove. If the medio-tarsal deformities were all, or the most important ones, found in equino-varus, my experience leads me to say that our results would be uniformly better.

I do not doubt that anatomists are correct in saying that there is no perceptible lateral mobility at the normal ankle-joint. But it is, I think, absolutely certain, clinically and pathologically speaking, that a very considerable and a very important displacement of the astragalus occurs in congenital equino-varus, accompanied in some cases by an intrinsic deformity of the neck of this bone. And I believe that the most important deformity of congenital equino-varus, as well as the most difficult one to remove, occurs at the very point at which many anatomists tell us it cannot occur.

The astragalus is closely held between the two malleoli; it articulates with the calcaneus and scaphoid bones only, and it is the only important bone of the tarsus which is not directly controlled by muscular action. Lying in its doubly protected position and held in place by its ligamentous attachments, it can only be reached, when we desire to correct the position it assumes in the condition under consideration, by attacking the bones with which it articulates. All the other bones of the tarsus are reached with comparative ease; but the astragalus can only be reached by an indirect force.

If, under these circumstances, we divide the plantar fascia and the gastrocnemius and all the other tissues ordinarily divided in the operative treatment of congenital equino-varus, we cannot, as we all know, insure a reduction of the deformity. We may even make a deep open incision into the plantar tissues and cut the anterior portion of the internal lateral ligament of the ankle-joint, and divide the tendo Achillis, without successfully reaching the displaced and rotated astragalus. Still further, osteotomy may be performed and a large wedge removed from the outer side of the tarsus, and still leave the rotated astragalus unmoved in its deformed position. In brief, I believe that the keystone of the deformity is at the misplaced astragalus; and that, if we succeed in replacing it in its normal position, the other deformities become of minor importance and are comparatively easily removed.

What is the position of the astragalus in congenital equino-varus? Sometimes, though we cannot always discover it, especially in young subjects, there is an intrinsic deformity of the head and neck of this bone, due, I am quite sure, in the majority of cases to rapid growth during the latter months of intra-uterine life, after the gastrocnemius has become shortened; but whether this intrinsic deformity exists or not it is apparent that the ac-

quired position of the astragalus in the condition named is not a simple one.

Rather than attempt to describe the malposition of the astragalus relatively in the condition under consideration, I think it better to study its position from a mechanical stand-point. We can then better understand the indications for treatment.

In response to the irresistible force which is acting upon all the misplaced tarsal bones through the medium of the shortened muscular and fibrous tissues, the astragalus becomes rotated, first, upon a *transverse axis; i.e.*, the head and neck are tilted downward as it is in the position of extension of the ankle-joint, or as it is in simple equinus. Secondly, it also becomes rotated upon an *antero-posterior axis*—or its under-surface is turned toward the mesial plane of the body upon an axis which corresponds, in general terms, with the long diameter of the foot. And, thirdly, it is rotated upon a *vertical axis*, or the head and neck are twisted toward the mesial plane of the body upon an axis which corresponds with the long diameter of the tibia, aiding in the production of the so-called inversion or adduction of the tarsus. In a typical case we find all these rotatory elements of deformity present, not only at the astragalus but also at all the other tarsal bones, producing a compound deformity that so disturbs the normal line of gravity that the patient in walking presents the cuboid bone to the floor.

A brief study of the anatomical construction of the tarsus, bound together as its component parts are by strong ligaments, will, I think, convince anyone that the extreme malposition of the cuboid bone (as a matter of illustration), and which is seen in all extreme cases of equino-varus, could not occur except as a result (1) of a dislocation at the calcaneo-cuboid articulation; or (2) a dislocation at the calcaneo-astragalar articulation; or (3) a malposition of the entire tarsus, accompanied by a greater or less elongation of all the ligaments on the concave side of the deformity, and a changed relation of all the articular tarsal surfaces. It is known that there is no true dislocation of any of the bones of the tarsus under the conditions named. The articular surfaces are disturbed, subluxation to a minor degree is present, and interarticular pressure is concentrated at certain exposed points. It seems evident in these cases that there is, among other things, a loss of relative growth between the muscles and the bones—especially the long bones of the leg—and that the arrested or impaired growth of the gastrocnemius produces a malposition that prevents the foot from assuming a normal position. Growth of the bones, however, goes on, and the result is that the tarsus, like every other complex body, yields in the direction of the least resistance. As the tarsus yields in response to the irresistible force of opposed bony growth, the os calcis, the cuboid, and the scaphoid are pulled, so to speak, from their normal position, dragging the astragalus with them after their ligaments have been stretched to their utmost capacity. In short, a certain degree of displacement of the astragalus takes place, and this is largely due to the fact that the superior articular surface of the astragalus, as well as the lateral facets, are from ligamentous or muscular attachments, and also because the ligamentous attachments of the lateral, as well as the anterior and posterior surfaces of this bone, are low down, or *below* the centres of rotation, to which attention has been called. There is, therefore, no ligamentous or direct muscular resistance to the rotation of the astragalus when the os calcis, the cuboid, and the scaphoid are drawn from their positions. The ultimate point of resistance lies, therefore, at the inferior articular surface of the tibia and fibula, and, as a result of the great and prolonged pressure which exists, it may be presumed that absorption of the articular cartilage ensues, and this, with the slight rotation of the fibula upon the tibia upon their long axes, accounts for some of the lateral or rotatory movements which the astragalus undergoes in the deformity under consideration. Even absorption of bone may follow, and it is not impossible that the ligamentous structures which bind the fibula and tibia together may yield as the result of the long-continued pressure, or that—especially in fœtal life—the astragalar neck may become twisted.

Associated with the shortened gastrocnemius in congenital equino-varus, we always have a shortening of the plantar tissues. This plantar shortening fixes the calcaneus in a position where it cannot rotate outward—this latter condition occurring only, as a rule, in flat-foot with elongated plantar tissues, or in valgus with a paralysis or weakness of the gastrocnemius. An important feature of congenital equino-varus is, therefore, an inward rotation of the calcaneus upon an antero-posterior axis, associated with a rotation upon a transverse axis.

After the remarks made upon the nature of the muscular shortening, we will assume that the normal longitudinal growth of the gastrocnemius is either arrested or impaired, and that the tibia is not affected to the same extent by the lesión or change which produces the so-called contracture of the muscles. If the tibia outgrows the muscle, and as a result of the irresistible force produced by longitudinal osseous growth in the long bones of the leg, a deformity must occur somewhere. In congenital equino-varus it is first seen in the rotation upon a transverse axis and in the complex rotation of the os calcis already referred to. Perhaps the tibialis posticus is also affected, as I think it is in many instances. The plantar tissues certainly are shortened. With these elements at work the deformity of equino-varus is not difficult to explain, from a mechanical stand-point. The whole tarsus is rotated like the key-stone—the astragalus—upon the three axes already mentioned. The hinge of this rotation, so to speak, is at the point of the least ligamentous and muscular resistance—the tibio-astragalar articulation—and, as a result of the prolonged and uninterrupted pressure, the whole tarsus assumes a position of chronic deformity, the various articulations becoming more rigid as time passes.

It is well to stop here for a moment to point out the conditions which the ligaments of the tarsus assume under these conditions. On the outer aspect of the foot they become elongated; on the inner, they soon become very materially shortened. This is especially so at the internal lateral ligament of the ankle-joint. All the other ligaments become either lengthened or shortened, depending upon their location and their relation to the acquired position of the bones to which they are attached—those on the convex side being elongated, those on the concave side being shortened.

After a time—but I think after a much longer time than is generally supposed—the articular surfaces of all the bones involved adapt themselves to the deformed position. My experience leads me to think that it is exceptional for the osseous troubles to reach a point of more than troublesome resistance before puberty unless there is a considerable intrinsic deformity of the neck of the astragalus; while the ligaments, on the other hand, become very much shortened, even in babyhood.

I feel therefore that we may assume the following as a basis to treat the condition under consideration: 1, That there is a compound deformity in equino-varus due to a rotation of all the bones of the tarsus upon three distinct axes, viz., transverse, antero-posterior, and vertical; 2, that this compound deformity is due to a loss of relation between muscular and osseous growth—not to muscular contraction or contracture, as has generally been supposed; 3, that the principal obstacles to a reduction of the deformity are (1) the position acquired by the astragalus (with or without an intrinsic deformity of the neck) and (2) the ligamentous shortening; 4, that these difficulties are much increased by the progressive ligamentous and osseous changes that occur as the direct result of prolonged malposition; and, 5, that the deformities of the medio-tarsal joint are secondary in importance to those which occur at the astragalus.

We will now pass to the question of treatment.

In undertaking any plan of treatment we must bear in mind that the whole tarsus is involved, and that any method which restores the astragalus to its normal position promises to be successful; for if we succeed in restoring the normal relations of the astragalus to the tibia we carry with it (the astragalus) the other bones of the tarsus. My experience proves that it is not the antero-posterior deformities, where rotation occurs upon a transverse axis only, that present difficulties. The real difficulties occur in the so-called "lateral" deformities, where we see the effects of the compound rotation, to which attention has already been directed. In order to make myself better understood, I will again briefly refer to the three varieties of rotation: The first named, *the transverse*, which is shown at the elevated heel; the second, *the antero-posterior*, is evident at the inward rotation of the os calcis; the third, *the vertical*, is seen in the inversion of the entire foot.

The result of the first-named condition, as has already been stated, is easily overcome if it be uncomplicated. The second and third conditions are due largely to the causes which produce the first, and may be considered as secondary to it.

Our first effort, therefore, should be to attack the gastrocnemius-shortening in such a way as to overcome its secondary effects; and it must be evident that any method which neglects the gastrocnemius-shortening must fail. But the entire tarsus is rotated, and we must not make the error of using the cuboid as a point of resistance to overcome the rotation of the tarsus, for the simple reason that if we do so we at once block the mechanism, whatever it may be, designed to overcome the rotation of the tarsus. The cuboid has taken its acquired position on account of its close relation with the os calcis. The tarsus, as a whole, should be thrown *downward and outward* (reversing the curve of the deformity, which is *inward and upward*), on an antero-posterior axis, to *outward* upon the same axis, and this downward and outward rotating force should be applied upon a remote axis until the os calcis and the astragalus fall directly under the tibia—the mechanism being so arranged that the rotation upon a transverse axis is also attacked. We must also remember, in treating all these cases—even those seen immediately after birth—that we are not dealing with muscular shortening only. Two other potent factors must be considered, and these are: 1, The resistance which exists at the shortened ligamentous structures; and, 2, a possible or even probable intrinsic deformity of the neck of the astragalus. And it must be remembered that these ligamentous structures soon adapt themselves to the acquired position of the bones of the tarsus. It is surprising how soon these ligaments shorten, and this remark is especially true of the internal lateral ligament of the ankle-joint. Any procedure which ignores this condition or the changed articular surfaces is apt to result in failure. And the difficulty of attacking these shortened ligamentous tissues, especially those upon the internal malleolar aspect of the ankle, is apparent. It is very easy to apply traction to the antero-posterior contractions—of whatever nature—but it has not been so easy, heretofore, to reach the internal lateral ligamentous contractions, or the twisted astragalar neck by this same method of traction—though it seems evident that the resistance of a contracted ligament or a deformed bone is just as important as that of a shortened muscle, and much more difficult to reach. And this principle of lateral traction should not be applied without recognizing the fact that the cuboid bone must rotate downward and outward with the other bones of the tarsus upon a remote centre of motion in removing the deformity of equino-varus. My experience has proved that if the whole foot is rotated outward upon a remote centre by an adequate mechanism, the heel being properly secured, the major deformities become modified very soon.

In my experience the principal obstruction to the reduction of the deformity (excepting, of course, an intrinsic deformity of any of the tarsal bones) exists in the shortened ligamentous tissues which lie between the inner malleolus and the tarsus. I formerly regarded the plantar tissues as being the most obstinate—and they still tease us all. But the internal lateral ligament of the ankle is very strong and dense. It arises from the internal malleolus, and sends its radiating fibres not only to the os calcis and scaphoid but to the astragalus as well. This ligament is always shortened in congenital equino-varus, and the tarsal bones to which it is attached are imprisoned in their acquired positions until the contracted portions of the ligament are elongated. I regard this ligamentous resistance as being far more important than the gastrocnemius or plantar shortening. If we can find some means to overcome this shortening of the internal lateral ligament, I am sure that we will find that the duration of the treatment of congenital equino-varus will be very materially shortened, and much better and far more permanent results will be secured.

The apparatus I will show you to-night treats the internal lateral and other ligamentous resistance exactly as the gastrocnemius is treated in our efforts to overcome the antero-posterior contractions of equinus with the antero-posterior traction-shoe.[1] The aim of this new traction-apparatus is to bring the rotated tarsus, as a whole, and by a very simple movement, directly under the inferior articulating surface of the tibia, attacking not only the post-tibial resistance, but also, and especially, the stubborn shortening of the internal lateral ligament, as well as all the other contracted tissues upon the inner or concave side of the deformity. If the neck of the astragalus is twisted, a very great force is applied to it in the right direction. I had previously attempted to accomplish these ends by a pushing force, acting from the

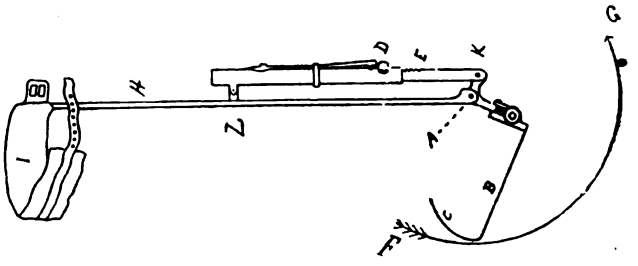

FIG. 1.

inner side of the foot (the internal lateral-traction shoe). But experience proves, in a very limited number of cases, that it is difficult to apply the rotating force accurately when using this internal lateral stretcher, and it was also found that the rotation of the cuboid was sometimes arrested by the mechanism of the apparatus before it fell into its proper position. And it may be that a sufficient force could not be obtained in cases where there was an undiscovered twist at the neck of the astragalus, a criticism which cannot be made of the external-traction shoe, which can be made a "crusher" if necessary.

In the apparatus I now show you, while sufficient pressure is exerted upon the cuboid by a simple retention-strap to make it a simple point of resistance, the apparatus is so arranged that the whole tarsus is rotated *downward and outward* to any desired extent; and a direct pressure is exerted in the right direction upon the twisted astragalar neck, if any deformity exists at that point.

In Fig. 1 there is shown a schematic engraving of the external lateral-traction apparatus, illustrating its application to a condition of equino-varus of the left foot, and its movement upon a remote antero-posterior axis. The centre of motion is at the point A, remote from the tarsus and outside of, but directly over, the external malleolus. The anterior portion of the foot rests upon the foot-piece

[1] Vide The Use of Traction in the Treatment of Club-foot, New York Medical Journal, March 5 and 12, 1887.

B, inside of the curved lateral plate C, which grasps the inner aspect of the foot at the junction of the first metatarsal bone with the first phalanx of the great toe. The heel is retained by the conventional astragalar retention-strap, and the heel traction-strap of the antero-posterior-traction apparatus. The foot-plate of the apparatus is removed posterior to the point which corresponds with the junction of the tarsus and metatarsus, leaving an open and unobstructed space for the descent of the heel when traction is applied. The necessary arrangements to secure the heel, etc. (not shown in this engraving), are the same as those used in the application of the antero-posterior-traction shoe, which is described in full in the *New York Medical Journal* for March 5 and 12, 1887.

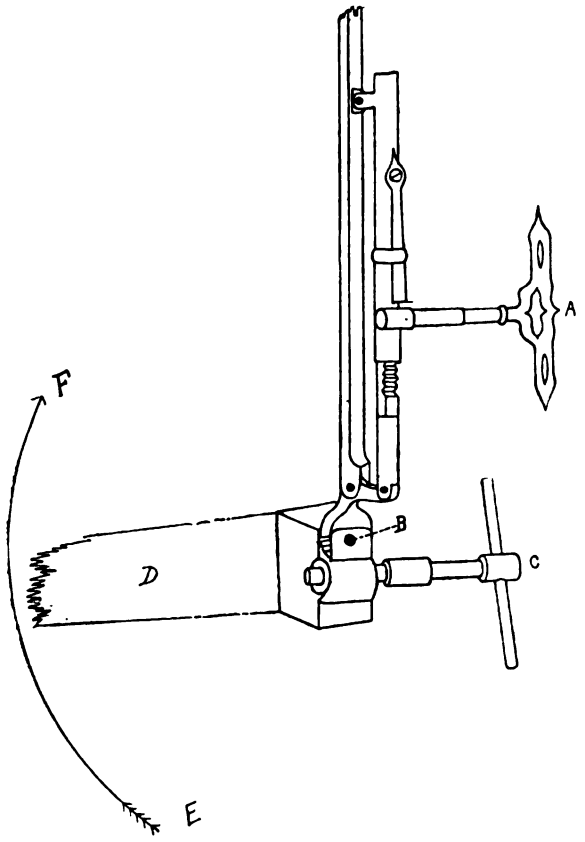

FIG. 2.

The foot being secured by the straps referred to, in the apparatus now under consideration, in its deformed position (at the angle, for example, shown in Fig. 1), a key (A, Fig. 2) is introduced at the cylinder D, and the extension rod E is *shortened*. The entire foot-piece of the apparatus is thrown downward and outward by this movement in the direction of the curved arrow F, upon the remote centre A, and the foot, properly secured in the apparatus, follows the same movement.

The foot-mechanism is attached to a straight, strong steel bar, H, and this side-bar is surmounted by a conventional calf-band, I, which is made to closely encircle the calf at a point just below the knee-joint. The retraction-rod is attached to the side-bar at L. In varus this side-bar, H, is placed on the outside of the leg—in valgus on the inside. In difficult cases this side-bar may be continued upward so as to include both leg and thigh, with a perineal pad to afford a point of counter-resistance to the force applied below. But in any event, and in order to secure a proper adjustment of the apparatus and to exert an adequate force in the right direction, the leg-piece of the side-bar H should be directly over the fibula, and at least one inch away from it at the external malleolus, in the treatment of equino-varus.

Fig. 2 gives a side-view of the apparatus, and illustrates the action of the apparatus upon a transverse axis. The centre of motion on a transverse axis is at the point B, the key C acting on a worm and screw which lowers or elevates the anterior part of the apparatus, D. The foot being retained in the apparatus by the astragalar and heel retention-straps already referred to, and secured in the exact position of the deformity, the initial force is applied by turning the key C so as to move the anterior part of the apparatus, D, in the direction indicated by the curved arrow E F, until a considerable resistance is offered by the shortened tissues of the foot. Then the key A is used, the outside retraction bar and rod is forcibly shortened, and the whole foot rotates downward and outward, as indicated by the curved arrow F G in Fig. 1.

The curved lateral plate C (Fig. 1) can be moved at will and secured by a key and clamp in any desired position, thus meeting any ordinary amount of inversion of the anterior portion of the tarsus. In short, it is not ordinarily necessary to make any special provision for the rotation of the tarsus upon a vertical axis. When, however, any special mechanism is necessary, that attached to the foot-plate of the "internal lateral-traction apparatus" (described in full in the *New York Medical Journal*, March 5 and 12, 1887) meets all the indications. In some cases I have used this attachment with advantage, but in almost every case the vertical rotation has yielded to the combined force represented in the accompanying engravings.

In ordering this apparatus, the centre A (Fig. 1) can be placed at any desired point, and its position will vary with the extent of the deformity, the amount of force required, etc. The same remark applies to the arm A K (Fig. 1), which can be lengthened or shortened as occasion demands. It is easy to see that, with the combined force exerted by both these powerful levers, an osteoclast could easily be constructed, and I am now having one made with this end in view.

I am indebted to my friend Dr. Charles L. Scudder, of Boston, for his assistance in the preparation of the engravings which accompany this paper, as I also am for his recent contribution to the etiology of club-foot.[1]

MARRIAGE AND BIRTH STATISTICS IN ENGLAND.—It is said, in the *Pall Mall Gazette*, that each year 15 people out of every 1,000 marry. Of each 1,000 men who marry 861 are bachelors and 139 are widowers, while of each 1,000 women only 98 have been married before, and 902 are spinsters. Twelve marriages out of every 100 are second marriages. The average age at which men marry is about 27, while the average age at which women marry is about 25 years. Out of every 1,000 persons 602 are unmarried, 345 are married, and 53 widowed. Over one-half of all the women between 15 and 45 are unmarried. In all countries about 5 per cent. of marriages prove barren. Among the English nobility 19 per cent. are childless. Married women live two years longer than single ones, although 1 in 70 dies in childbirth. If the mother dies first, the father survives 9½ years; but if the father dies first, the survival of the mother is 11½ years, as an average. Two thousand four hundred and forty-one births occur in England daily, about 33 for each 1,000 inhabitants. February is the month in which the greatest number of births occur, June the month in which occur the fewest. The average number of births for each marriage is 4.33. In every 1,000 births 11 are twins.

TREATMENT OF ACUTE BRONCHITIS IN THE EARLY STAGES.—The following is recommended by Dr. H. C. Wood as remarkably efficacious in the abortion of an attack of acute bronchitis:

℞. Potassii citratis..... ℥j.
Syrupi ipecacuanhæ..... f℥j.
Succus limonis..... f℥ij.
Aquæ..... ℥iij.
M. S.—Two teaspoonfuls every two hours.

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[1] Congenital Equino-varus, Boston Medical and Surgical Journal, October 27, 1888.

LOCALIZED BASAL MENINGITIS AND DOUBLE OPTIC NEURITIS.[1]

By WM. M. LESZYNSKY, M.D.,

LECTURER ON MENTAL AND NERVOUS DISEASES AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL; NEUROLOGIST TO THE DEMILT DISPENSARY; ASSISTANT PHYSICIAN AT THE MANHATTAN EYE AND EAR HOSPITAL, ETC.

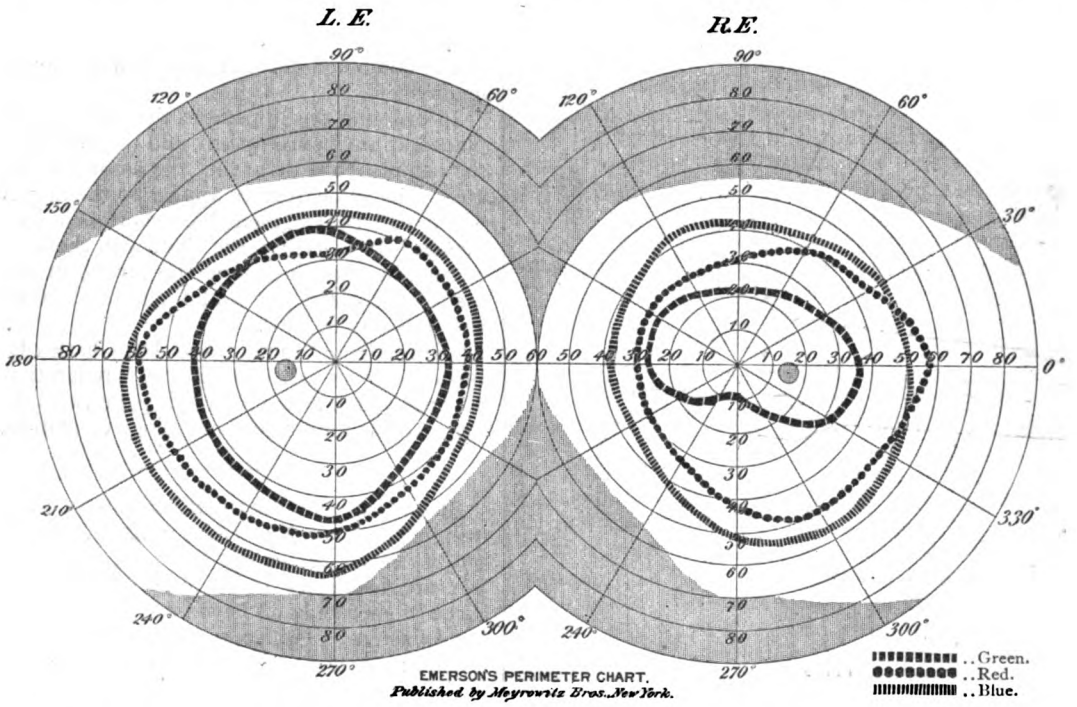
THE patient to be presented this evening, whose history is the text of this paper, has been under my personal supervision, at short intervals, during the last five years. As a demonstration of the advantage of an early recognition of serious symptoms, and as an exemplification of the value of systematic observation extending over a prolonged period, he may be considered an exceptional illustration.

F. M——, sixteen years of age, and employed as an errand-boy, first came under observation November 22, 1883, with the following history: Present illness began eight months ago with constant frontal headache, which still persists. Frequent attacks of nocturnal vomiting occur without known cause. He awakes at night, suddenly empties the stomach, without previous nausea, and then lies down and sleeps comfortably until morning. He also vomits occasionally during the day without warning, the attack occurring independently of the ingestion of food. Has never complained of vertigo or subjective eye-symptoms. Appetite good; bowels constipated. Generally sleeps well. During the last six months treatment has been directed to his stomach, without benefit. Headache is the principal symptom for which he seeks relief.

His mother, who accompanies him, says that she and her husband are healthy. Patient was a well-developed infant at birth, and experienced the usual diseases of childhood. About two years ago he had scarlatina, without symptoms of renal complication. There is no family history of syphilis or tuberculosis. His head has never been injured by a blow or a fall. He has no evil associates, and is not addicted to any objectionable personal habits.

Present condition. — Intelligent, anæmic-looking lad. The pupils are equally dilated to 27 mm., and react normally. There is no hypersensitiveness to pressure over the supraorbital nerves, nor upon percussion of skull. The tongue is protruded well, is slightly tremulous, and has a moderate amount of "coating." Pulse, 80, regular, feeble, and compressible. Rectal temperature, 99° F. With outstretched hands, there is well-marked tremor in both upper extremities, which, in view of his anæmic condition, cannot be considered of much diagnostic significance. No ataxia. Grasp, with dynamometer, registers, right, 82; left, 72. Gait and muscular resistance, good; knee-jerks and skin reflexes, normal. Heart, lungs, and abdominal organs present no abnormalities. Examination of urine, negative. The only positive objective symptom is discovered upon ophthalmoscopic examination, which reveals double optic neuritis vision. Right eye = $\frac{20}{40}$; L. = $\frac{20}{40}$; fields, normal. Both disks are swollen, and their outline obliterated; elevation of right = + 3 D.; L. = +5 D. The arteries are small, and the veins are much enlarged and tortuous, both being partly obscured by the opacity of the papillæ. The inflammatory process has invaded a portion of the surrounding retina, but there are no hemorrhages. The region of the macula is free from œdema or exudation.

December 24th, one month later.—The urine has been frequently examined and found to contain triple phosphates; otherwise normal. Under treatment the headache and vomiting have become less frequent. V. R. = $\frac{20}{50}$; L. = $\frac{20}{100}$; H. at disk: R. = 4 D.; L. = 1.5 D. In comparing the swelling of the disk with the acuteness of vision, it is interesting to note that while the elevation of the nerve in the left eye measures 1.5 D. and the vision is but $\frac{20}{100}$, that of the right is $\frac{20}{80}$ with an elevation of 4 D. In this instance the acuteness of vision appears to be inversely proportionate to the degree of swelling.



EMERSON'S PERIMETER CHART.
Published by Meyrowitz Bros., New York.

January 10, 1884, about four weeks later.—He was improving in general health; tremor in hands diminished; headache and vomiting have subsided, but the swelling of the optic disks has decidedly increased since last note; right = + 5 D.; left = + 6.5 D. There are also signs of effusion into the retina.

June, 1884.—During the last six months occasional attacks of headache and vomiting occurred. In the month of February left-sided tinnitus began, and has continued, with short intermissions, to date. The retinal effusion gradually diminished and has entirely disappeared. The elevation of the disks has varied from time to time. At present V. R. = $\frac{20}{20}$; L. = $\frac{20}{50}$; right disk = + 3 D.; L. = + 5.5 D. He is gaining in weight and improving in appearance.

January, 1885, over a year since his first visit.—Has been quite well during the last six months; no headache,

[1] Read before the New York Neurological Society, March 5, 1889.

vomiting, or tinnitus; the optic neuritis has been slowly subsiding; V. R. = $\frac{20}{70}$; L. = $\frac{20}{30}$; disk, R. = + 3.5; L. = + 4.

October, 1885.—Remained well during the year; the optic neuritis has been gradually receding, and the disks are beginning to look atrophic; V. R. = $\frac{20}{70}$; L. = $\frac{20}{30}$. There is concentric contraction of the visual field of right eye; left field normal.

October, 1886, a year later.—He continues in good health; vision has improved in right eye, which equals $\frac{20}{40}$ +; left = $\frac{20}{30}$ +; both fields are found to be normal.

November, 1888, five years since first appearance.—V. R. = $\frac{20}{30}$; L. = $\frac{20}{30}$; both nerves atrophic; color perception perfect; perimetric fields for white, normal; left color-field irregularly contracted in different meridians for blue, red, and green; right field contracted in all meridians, more marked for green.

For the benefit of those unfamiliar with the visual field for colors, I append the method of Landolt[1] as described by Jules:[2] "In testing the limits of the field for colors, Landolt found that when colors of great intensity, such as those of the solar spectrum, are used, they can be recognized quite up to the limits of the field for white. When, however, ordinary disks of colored paper of about two centimetres in diameter are used in the manner above indicated for white, it is found that the peripheral portions of the retina are less easily excited by colored than by white disks, and that each color has its own limits, beyond which it ceases to be perceived by the retina. Thus, if we test the normal eye with the fundamental colors—blue, red, and green—in ordinary bright, well-diffused daylight, we find that, on passing the test-object from the periphery toward the centre, the blue is the first to be recognized, after that the red, and next the green. If the fields for each of these colors are respectively taken, and their outlines marked with colored pencils, we obtain a chart similar to that represented in the accompanying diagram. Thus we find that the field for blue is almost as large as that for white, that it is larger than that for red, while the field for green is considerably smaller than that for red. Of the other colors of the spectrum the field for yellow is very similar to that for blue; the field for orange exists between the limits of the yellow and the red. Violet is a difficult color to test; it appears for a considerable distance as blue before its color is really recognized as violet. The three fundamental colors—red, green, and blue—are really all that are required in practice. The limits of the normal fields for color are necessarily difficult to fix with accuracy, because, as we have seen, the sensibility of the retina varies with the intensity of the color and the brightness of the illumination, and the acuteness of vision for color is much less marked at the periphery than toward the centre of the field.

From a number of experiments on this subject Landolt is of opinion that the following should represent the minimum extent of the normal visual field for colors:

	Blue.	Red.	Green.
Upper	50°	35°	30°
Outer	80°	70°	55°
Lower	55°	45°	35°
Inner	50°	40°	30°

Other observers, however, consider that the normal limits are considerably less than this. This difference of opinion is doubtless owing to different conditions in experimenting.

The treatment during the early period of the illness was rest, diet, the relief of constipation, first by calomel, and later by suitable food. Subsequently mercurial inunction, followed by increasing doses of iodide of potassium, and iodide of iron with cod-liver oil. He wore smoked glasses, and when retinal effusion appeared depletory measures were adopted. All treatment was discontinued about two years after his first visit.

[1] Dr. E. Landolt: Examination of the Eyes. 1887.
[2] Ophthalmic Science and Practice, p. 232. 1884.

Since his restoration to health a period of four years has elapsed, and he has been steadily employed at his usual vocation without a recurrence of the slightest manifestation of his former illness. As he appears before you his condition is that of perfect health, with the exception of apparent atrophy of both optic disks. Two samples of urine were recently examined and found normal.

My friend Dr. David Webster has kindly sent me the following report of the result of his examination, made February 8th of the current year:

"I find that F. M—— has well-marked atrophy of both optic disks. The disks are bluish-white and their margins ragged-looking. Around the discal borders, and especially above both disks, there are patches of connective-tissue changes, and the principal retinal vessels are more or less tortuous, though nearly of normal size. By gas-light, R. V. = $\frac{20}{30}$ —; L. = $\frac{20}{30}$ + (three letters out of seven in $\frac{20}{20}$). That he sees so well with such atrophic-looking disks is, to say the least, gratifying."

To recapitulate the salient features of this case: A somewhat anæmic young man appeared five years ago, when sixteen years of age, complaining of constant frontal headache and frequent attacks of causeless vomiting. Well-marked double optic neuritis was the only objective symptom. His parents were living and healthy. No family history of syphilis or tuberculosis could be obtained. He had never received any injury to his head, nor had he been subjected to toxæmic influences. Symptoms of illness began eight months before consultation. About fourteen months previous he had scarlatina. Careful and repeated interrogation of his parents failed to elicit any evidence to prove that renal complication existed during the attack. The headache and vomiting, and subsequently tinnitus, continued with irregular intermissions for about fourteen months. The optic neuritis did not show signs of recession until six months later. The vision was at no time seriously interfered with, and his progress toward complete recovery, with the exception of a trifling impairment of sight, has been almost uninterrupted.

To what pathological process can we attribute this association of symptoms, and what was the nature of the primary lesion? (Without a view of the ocular fundi and the discovery of double optic neuritis, a rational diagnosis would have been impossible.) We may safely exclude syphilis, tubercular disease, malarial toxæmia, lead encephalopathy, and orbital lesions.

Repeated examinations of the urine fail to indicate any affection of the kidneys. In the absence of pronounced or discoverable focal symptoms, the diagnosis, which is necessarily speculative, can only be made by exclusion, and rests between intracranial tumor and localized basal meningitis.

That headache, vomiting, and double optic neuritis are non-localizing symptoms, is a universally accepted fact. That this symptom-complex is suggestive of an intracranial neoplasm, or indicative of an irritative pathological process within the skull, cannot be doubted. The absence of a tubercular or syphilitic history, or any of their objective constitutional manifestations, and the progress of the case toward ultimate and complete recovery, militates against the diagnosis of tumor. The remaining evidence, then, seems to be in favor of a chronic inflammation, most probably in the form of chronic meningitis.

A careful consideration of the foregoing analysis impresses me with the belief that the primary lesion in this case was a circumscribed basal meningitis, non-tubercular in character, resulting from, or induced by, the constitutional state accompanying or following scarlatina.

There being no cranial nerve paralysis, it may be assumed *a fortiori* that in all probability the meningitis was confined to the neighborhood of the optic chiasm, producing the neuritis by extension of the inflammatory process along the structure of the optic nerves.

The complication of optic neuritis following the specific fevers has been observed and recorded by v. Graefe

Nagel, Wadsworth, Allbutt, Gowers, Leber, and Bouchut.[1]

It is beyond the scope of this paper to enter upon a discussion of the pathogeny of optic neuritis, or its relation to intracranial tumor. (A complete and logical analysis of the prevailing theories may be found in Bramwell's[2] recent work, also in Gowers' "Medical Ophthalmoscopy," and is too well known to need more than passing reference.)

The most interesting clinical feature of this case is the pronounced optic neuritis. This condition received the attention that its importance demanded for nearly a year before any signs of recession were noted.

Another instructive fact is the lack of relation between the degree of inflammation in the optic nerves and the visual power. (See table.) This observation is particularly mentioned in order to emphasize the dictum that a high grade of optic neuritis and normal vision may coexist. *Vice versa*, a comparatively slight or moderate degree of apparent neuritis may be present and blindness may result. Similar observations are recorded by Hughlings Jackson, Gowers, Hutchinson, Mauthner, Schweigger, Landolt, and others. Dowse[3] tells us that optic neuritis, without impairment of ordinary visual power, has been known through the researches of ophthalmologists since the introduction of the ophthalmoscope. Optic neuritis being present in the majority of cases of intracranial tumor, at some time during its course, we can readily understand how difficult it often is to differentiate tumor from basal meningitis.

Table showing the Acuteness of Vision as compared with the Swelling of the Optic Disks.

Date.	Visual power.	Elevation of nerve as determined by the ophthalmoscope.	Approximate measurement according to the formula of Helmholz. (Lohring.)
1883.		D.	Mm.
December 3d	R. = 20/40	+ 3.0	0.83
	L. = 20/70	+ .0	1.33
December 13th	R. = 20/40	+ ..0	0.56
	L. = 20/70	+ 3.0	0.83
December 24th	R. = 20/5c	+ 4.0	1.09
	L. = 20/100	+ 1.5	0.43
1884.			
January 10th	R. = 20/40	+ 5.0	1.33
	L. = 20/7c	+ 6.5	1.71
January 26th	R. = 20/40	+ 4.0	1.09
	L. = 20/70	+ 5.0	1.33
February 16th	R. = 20/40	+ 5.0	1.33
	L. = 20/60	+ 4.0	1.09
March 4th	R. = 20/40	+ 5.0	1.33
	L. = 20/60	+ 5.0	1.33
June 12th	R. = 20/70	+ 3.0	0.83
	L. = 20/60	+ 5.5	1.47
1885.			
January 26th	R. = 20/70	+ 3.5	0.97
	L. = 20/30	+ 4.0	1.09
October 16th	R. = 20/70	+ 3.0	0.83
	L. = 20/20	+ 3.0	0.83
1886.			
May 7th	R. = 20/50	+ 2.0	0.56
	L. = 20/30	+ 2.0	0.56
October 8th	R. = 20/40 +	+ 1.0	0.29
	L. = 20/30 +	+ 2.0	0.56
1887.			
March 27th	R. = 20/40		
	L. = 20/40 +		
1888.			
November 4th	R. = 20/30 −		
	L. = 20/30		

NOTE.—All examinations were made under similar conditions of light, etc., between the hours of 3 and 4 P.M., at the Manhattan Eye and Ear Hospital, and in every instance verified by my friend Dr. David Webster, who kindly interested himself in the case.

As it is often produced in cases of brain tumor by the development of secondary meningitis, there is no reason why a primary basal meningitis should not prove equally potent in its production.

It has been said that the neuritis may either pass off when the gross disease causing it remains; or the progress of the primary lesion may be held in abeyance while the inflammatory process affecting the optic nerves persists, or even increases. In my patient the meningitis probably got well, while the neuritis remained and required special attention.

[1] J. Hutchinson, Jr.: Ophth. Review, vol. v., p. 241.
[2] Intracranial Tumors, p. 67 1888.
Med. Press and Circ., xxvii., 519. London, 1879.

Stephen Mackenzie[1] is of the opinion that "optic neuritis is so commonly symptomatic of some adventitious intracranial product, or of some gross intra-cranial lesion, that a diagnosis often turns on this one point." That it is not always indicative of coarse intracranial disease is shown by the remarkable cases reported by Noyes (1873), and Hughlings Jackson (1876). Mauthner[2] also speaks of patients exhibiting many of the symptoms of brain tumor (severe headache, vomiting, optic neuritis, paralysis of cranial nerves, etc.), where upon autopsy no gross lesion was discovered.

Most clinicians hold that the diagnosis of circumscribed basal meningitis *intra vitam* is impossible, while others doubt the existence of such a primary affection.

There can be no doubt that localized basal meningitis exists both in an acute and chronic form, this fact having been clearly demonstrated by the post-mortem examinations of 47 cases of this affection collected by Gintrac,[3] of which 43 were of the acute variety, while only 4 were chronic in character. Strümpell[4] recognizes that "certain rare cases of chronic circumscribed meningitis cannot be differentiated from a tumor. They generally occur at the base, lead to a considerable thickening of the tissues, and may simulate all the symptoms of a new growth in this region."

Gowers[5] says, "attacks of local meningitis without discoverable cause are very rare, although in a slight and transient form it is possible that they are not quite so uncommon as is usually assumed."

Most observers agree that there is no distinctively characteristic appearance of the optic disks which will enable us to diagnose meningitis from tumor. Mauthner,[6] however, is of the opinion that "if in a case of optic neuritis there is a difference in the refraction between the base and summit of the disk equalling four dioptrics, the diagnosis of tumor is justifiable." While Gowers[7] believes that "a slight degree of neuritis may be due to either tumor or meningitis, but an intense neuritis with considerable swelling and hemorrhages is practically conclusive of tumor."

These views cannot be accepted as conclusive, and require further confirmation.

In a clinical lecture delivered in 1878, Dr. E. C. Seguin[8] presented three children whose symptoms closely resembled those of my patient, the only difference being the absence of strabismus in my case. The following is a brief outline of their histories, with Dr. Seguin's conclusions:

CASE I.—An anæmic girl, aged six, complaining of headache for two or three weeks, with strabismus of one week's standing. No fever, spasm, or delirium; frequent vomiting and marked constipation. To the ophthalmoscope is due the discovery of the most important symptom—double neuro-retinitis.

Diagnosis.—Basal meningitis, localized about the chiasm of the optic nerves, probably without tubercular deposit. Under the use of potassium iodide and blistering the headache and vomiting have ceased, and improvement has begun.

CASE II.—Girl, aged four. Previously healthy. Symptoms, which began five weeks ago, were: dulness, irritability, headache, and vomiting, followed two weeks later by internal strabismus. No fever, spasm, or delirium. Double neuro-retinitis is present.

Diagnosis.—Non-tubercular localized basal meningitis. Potassium iodide was given. The strabismus disappeared within a few weeks, and the neuro-retinitis gave place to atrophy of both optic nerves, which fortunately was slight, so that vision remained nearly perfect.

CASE III.—A girl, aged five, with a history of "chicken-

[1] Brain, v. ii., p. 267.
[2] Gehirn und Auge, p. 570. 1881.
[3] Maladies de l'Appareil Nerveux, vol. ii. Paris, 1869.
[4] Text-book of Medicine, p. 714. 1887.
[5] Trans. Ophth. So. Unit. Kingd., v. i., p. 116.
[6] Gehirn und Auge, p. 569. 1881.
[7] Dis. of Nerv. Syst., p. 745. 1888.
[8] Hosp. Gaz., March 1, 1878.

pox" a month ago, without fever or apparent ill-health. No headache or irritability, or other symptom, at the present time. Internal strabismus appeared two weeks ago, and has persisted. There is well-marked double optic neuritis. "Neuro-retinitis existed in all the cases cited. But other important symptoms of intracranial disease, such as convulsions, delirium, paralysis, fever, irregularity of the pupils and of the pulse-rate were absent. In none of these cases was the basal disease secondary to any serious general fever or constitutional state." . . . "While regarding the lesion as an inflammation of the pia mater, I do not believe that it is tubercular, because of the absence of aggressiveness on the part of the disease, the absence of previous illness, or of focus whence tuberculization might be set up; and, lastly, because in one case recovery easily and rapidly occurred."

One of the pioneers in the use of the ophthalmoscope in nervous disease, T. Clifford Allbutt, of London,[1] long ago reported a series of equally instructive cases, but of a more severe type, in some instances the diagnosis being verified post mortem. He maintains that when a patient is seized with vomiting, headache, convulsions, and other symptoms of much meningitis, and when, at the same time, examination with the ophthalmoscope reveals congestion of the optic disks and retinal vessels, it can be said without hesitation that there is meningitis at the base of the brain. When, however, occasionally "purposeless" vomiting without nausea occurs, in conjunction with headache, fever, restlessness at night, spasmodic twitching during sleep, or even convulsions, with a change in disposition and slight mental impairment, together with the same ophthalmoscopic picture, and eventual recovery, "is it not probable that in these cases we have also meningitis—a meningitis less severe than that which proves fatal, but meningitis nevertheless?"

Bramwell[2] expresses the view that in some cases in which the onset is more or less sudden, and symptoms common both to meningitis and tumor—headache, vomiting, vertigo, optic neuritis, etc.—are developed, the headache and other symptoms disappear, the optic neuritis completely subsides, and the recovery may be perfect. . . . The lesion is more probably meningitis (syphilitic often) than tumor, or it may have been a gumma.

Other tumors may be excluded, for all pathologists know how rare it is to find within the skull the remains of a cured tumor other than a syphilitic gumma.

In the discussion upon double optic neuritis, before the Ophthalmological Society of the United Kingdom,[3] Hughlings Jackson differs from the foregoing opinion, and says that in cases of recovery from acute illness, where defective sight and some atrophy of the optic disks has remained, the evidence is in favor of gross local organic disease, such as tumor, rather than meningitis.

Complete recovery with good sight does not negative persisting local gross organic disease within the cranium. This is strikingly true in some cases of syphilitic tumor. Under treatment the symptoms pass off, though the patient may come again and again for the same localizing symptoms that indicate the persistence of the disease in one place. The fact of recovery is strong evidence against meningitis. And the question is asked, Have traces of meningitis been found after such recoveries, when the patients have died of some other disease?

This question can be satisfactorily answered in the affirmative by the history of a case, with autopsy, reported by Professor Haab, of Zurich, through whose kindness I am enabled to present the following notes:[4]

Louise S——, thirty years of age, consulted Professor Haab on July 17, 1882, and gave the following history: During the last six months she noticed diminution in visual power. Within the last four weeks her sight has been rapidly failing. Previously she was occasionally troubled with slight afternoon headache, but during the last two years the attacks of headache have been quite frequent. With the onset of severe headache the eyes became more prominent, but cardiac palpitation was never experienced.

She formerly received treatment for headache and gastric catarrh. Last winter she had tinnitus affecting right ear, and attacks of earache.

The headache is always worse on right side, and the pain reaches its maximal intensity at about 10 P.M., but is much less after sleep.

About four weeks ago she vomited a number of times during the same day. No attacks since.

Menses regular every three weeks. Father died of apoplexy. Mother has ascites. No tuberculosis in family.

Status præsens.—Fairly good-looking, middle-sized person. The eyes are somewhat divergent when she looks in the distance. Pupils equal and moderately dilated. The eyeballs are markedly prominent, so that when she looks directly before her a broad strip of the sclera is exposed, about two to three mm. above the corneæ. V. R. = movement of hand at 1 mm. L. = movement of hand at 50 ctm.

Ophthalmoscopic examination.—Media clear. The contour of optic nerves is obliterated, and papillæ enlarged, particularly the nasal halves.

Left.—The temporal half is white and atrophic.

Right.—The same is quite marked, but less than in left. Both disks show decided neuritis, the left somewhat older than the right, as indicated by the atrophy. The nasal half of right is redder, and when seen in the upright image has more fine capillaries than the left nasal half. A number of small vessels, which present a peculiar serpentine appearance, have formed over the left papilla. Upon both sides, left more than right, the veins are markedly full and rise above the level of the retina. No hemorrhages or changes in the macula region. No white spots in the retinæ. The nasal halves of papillæ are much swollen, so that the fundus measures H_2.D., while at the highest point of the nerve H_6.D. exists. Pulse, 100, and regular. Upon the right side of neck there is a moderate-sized struma which extends upward as far as the hyoid bone. This oblong growth is about the size of a hen's egg, and is often painful, whereas the left half of the thyroid is less enlarged and not painful.

Patient says that for a long time she has used ointment for her goitre, as it is a family complaint. Her father and grandfather had enlarged necks. Hearing normal on both sides. Urine turbid, slightly acid. No albumin.

Treatment.—Quinine muriat., 0.05, iodide of potassium, 0.1. Two powders daily. Smoked glasses.

July 25th.—When she looks down, the upper eyelids follow normally. She is hoarse to-day, as is often the case. During the last few days had constant very severe headache, less at night than during the day, but can only sleep an hour at a time. Dreams. V. R. = fingers at 1 foot, movement of hand at 10–12 foot. L. = momentary movement of hand at 1 foot with temporal part of retina.

Visual field: L. = marked contraction on all sides. R. = especially from inward, and also in the remaining radii. *Colors:* L. = none recognized. R. = only red, in pieces of four ctm. square at half foot. Blue and green not recognized. Pupils equal. Both dilated ad maximum. Ophthalmoscopically unchanged. No hemorrhages or foci of degeneration.

September 4th.—Her brother states that patient's sight has been failing, that the headache is increasing, and her appetite is bad. The urine contains some albumin. Upon the recommendation of Professor Haab she was admitted to the hospital, where she remained twenty-two weeks. Upon her return home she was quite well, had very slight or no more headache, and no vomiting. With the exception of the total blindness, she was in good health.

Her fatal illness began on April 1, 1883, with vomiting and diarrhœa. On the 2d, severe gastro-intestinal

[1] The Ophthalmoscope in Dis. Nerv. Syst. p. 88. 1871.
[2] Intracranial Tumors, p. 138. 1888.
[3] Trans., vol. i., p. 73.
[4] Studien über den Zusammenhang von intracraniellen Affectionen und Nervenerkrankung. Inaug. Dissert., J. Zellweger. Zurich, 1887.

catarrh, with frequent vomiting, came on. On the 4th, symptoms of collapse appeared from constant vomiting. Abdomen tympanitic. No fever. Pulse, normal. At the same time her mother, who slept in the same bed, became ill with vomiting and diarrhœa. Patient's mind remained clear to the last. Anxiety and fear were the principal symptoms of which she complained. She died at 8 P.M. on the 5th of April.

The autopsy could not be made until the 8th. Permission was obtained with great difficulty, and with the understanding that only certain portions of the body should be examined. The following was noted by Professor Haab, who made the examination in the presence of the attending physicians:

Body not emaciated. Rigor mortis absent. Suggillations on upper part of thorax. The dura is firmly adherent to the calvaria, nevertheless it can be easily separated from it. The blood-vessels of the dura and pia are very full.

A few Pacchionian bodies are present. There is no flattening of the convolutions either at the convexity or base. The surface of the brain presents no abnormality in size or shape. Upon the outer side of the left frontal lobe, anterior to the pre-central convolution, over a number of sulci, the pia is milky and turbid in appearance. The subarachnoid space contains serous fluid which is somewhat yellow. Also in the right Sylvian fissure and in a few of the surrounding sulci there is turbidity of the pia and arachnoid, and a small collection of clear, non-purulent, yellowish fluid (hydrops meningeus). The same, in lesser degree, on left side. Over the chiasm and infundibulum, extending to the pons, are found numerous thin, connective-tissue like, newly formed membranes, which are firmly adherent to the pia. These membranes are densest directly over the chiasm, which is completely enveloped by them. Here the pia is also thickened and opaque. No sign of purulent exudation; no tubercle. The entire brain is richly supplied with blood. The brain substance is of normal consistency. No further abnormalities are discovered. No tumor. Motor oculi nerves normal. The optic nerves between the chiasm and optic foramen are somewhat flatter than normal. In the intra-orbital course of the optic nerves there is nothing remarkable macroscopically, except the atrophy, so that the nerves hang loosely in the canal. It was necessary to divide the nerves at the globe, as the removal of the eye-ball was not permitted. In the abdomen there was about five hundred c.c. of clear bloody serum. The serous coat of the small intestine was rose-red in color. No evidence of exudation. Kidneys small, surface smooth, capsule non-adherent. Cortical substance not swollen, and from gross appearance evidently not diminished. The liver shows signs of passive congestion (nutmeg type), otherwise normal. Spleen large, vascular, and tough. The stomach and intestines were not examined. Thoracic cavity not opened. Anatomical diagnosis, chronic basal meningitis of a slight degree. Atrophy of the optic nerves following neuritis.

In a subsequent review of the case the reporter says: "The changes in the optic nerves were undoubtedly due to the basal meningitis. (We could not learn anything further regarding the etiology.) Although the meningitic exudation completely enveloped the chiasm, the amount was nevertheless too small to have produced sufficient pressure that would lead to atrophy; neither did the floor of the dilated third ventricle press upon the chiasm. There was no evidence of a tubercular diathesis. No tubercles were found in the spleen or kidneys. Not the slightest trace of syphilis could be discovered. Microscopically there were no signs of endarteritis. Why the process should principally attack the neighborhood of the chiasm remains unexplained. As headache existed for two years before disturbance of vision led the patient to seek medical advice, it cannot be assumed that the optic nerves were primarily affected." A carefully written and detailed description of the microscopical examination is added, with the following conclusions: "The changes in the optic nerves may be thus summarized: Well-marked œdema of both optic nerve-sheaths; perineuritis; interstitial and parenchymatous neuritis, as a result of an inflammatory process occurring in the neighborhood of the optic chiasm."

The correctness of the diagnosis in my case is strengthened in the light of the foregoing contribution of Haab, this being the only case on record, with post-mortem verification, that I can discover, which in its main features bears a close resemblance to that which has served as a text for this paper. The principal points of similarity are: 1, The obscure etiology; 2, the absence of tubercular or syphilitic history; 3, the presence of headache, vomiting, tinnitus, and double optic neuritis; 4, the recovery (?) of the patient.

The question may now be asked, "Can we seriously entertain the diagnosis of brain tumor when headache, vomiting, and double optic neuritis are the only symptoms, in the absence of any evidence of syphilis, or tuberculosis, or other known cause of such a condition?"

In the present state of our knowledge it would seem that only by a careful process of exclusion, and by watching the progress of the case, is it possible to arrive at any satisfactory conclusion.

The literature bearing directly upon double optic neuritis from circumscribed basal meningitis is meagre in the extreme, and the subject is but rarely referred to in the text-books.

England is the prolific centre from which emanates the larger part of neuro-ophthalmological contributions of this nature. Clifford Allbutt, Hughlings Jackson, Hutchinson, Gowers, and others, have all made investigations along this line that are of lasting value.

The clinical importance of ophthalmoscopic examination appeals at once to every thoughtful mind. Without a view of the fundus of the eye, neurological investigation must remain incomplete and unsatisfactory. The ophthalmoscope brings to light, in many instances, the cause of obscure symptoms, and thus makes a rational course of treatment possible. The presence or absence of optic neuritis should be determined in every case. It is the neurologist's province to detect or exclude such morbid processes, overcome or arrest them when possible, and recognize their significance at all times. The ophthalmic surgeon in but few instances is called upon, unless failing sight or other subjective eye-symptoms are complained of, at which stage post-neuritic atrophy may be advancing and blindness imminent.

Unfortunately, good evidence of probably organic intracranial disease may be lost, as many cases of optic neuritis pass unrecognized for the following reasons:

1. As the patient does not complain of the eyes.
2. Owing to the absence of ocular symptoms.
3. Because, when the patient is able to read the standard test-type at the normal distance, the presence of optic neuritis is excluded.
4. As many physicians of intelligence and experience still harbor the idea that the existence of optic neuritis implies either blindness or decided deterioration of vision.
5. Because the ophthalmoscope is not in routine use.

Hence the frequency of avoidable errors in diagnosis which have at times been exemplified, for instance, in cases of persistent vomiting, where the stomach had been "washed out" for a prolonged period before the only symptom of cerebral disease was discovered upon ophthalmoscopic examination. (In young children it is often necessary to dilate the pupils with cocaine or atropine before a satisfactory view of the fundus can be obtained.)

Double optic neuritis is a serious condition, not only as a distant or indirect manifestation of intracranial disease, but also in the probability of its resulting in blindness. Dr. Jackson [1] calls attention to the fact that a patient with optic neuritis and other non-localizing symp-

[1] Transactions Ophthalmological Society, United Kingdom, vol. i., p. 75.

toms, may die rapidly or suddenly of the brain disease which they signify.

There are numerous instances on record where the patients have recovered with normal or useful vision; but there are many more, and I think they are in the majority, where the neuritis terminates in blindness. The same writer[1] very aptly says: "There would be fewer blind people if the ophthalmoscope were used in some so-called bilious attacks, in some so-called cases of hysteria," etc.

With so many expert oculists among us, who are ever ready to advance the cause of science, humanity, and knowledge, it should be impossible for those who complain of headache and vomiting of doubtful or obscure origin, to escape investigation as to the condition of the ocular fundus.

It is to be deplored that the studies of ophthalmology and neurology are not more closely associated. The two specialties are to a great extent interdependent. The practical advantages of this association must be evident to all. Such a combination would always enhance the value of clinical observation. No further emphasis or illustration is required to enforce this impression. In order to more firmly establish this relation, every eye infirmary should include in its service a separate department for nervous diseases. Many years ago the Manhattan Eye and Ear Hospital adopted this plan, and it is still in successful operation.

If this paper succeeds in directing the attention of the profession to a type of cases not universally recognized, and serves as a stimulus to encourage, cultivate, and sustain a bond of union between the ophthalmic surgeon and the neurologist, the objects of the writer will be accomplished.

ON THE HEALTH-VALUE TO MAN OF THE SO-CALLED DIVINELY BENEFICENT GIFT, TOBACCO.

By J. M. W. KITCHEN, M.D.,

NEW YORK.

With perhaps the exception of heredity, the question of stimulants and narcotics in their relation to the physical welfare of the race is second to none in importance. With trifling exceptions, the whole world is addicted to their use. The universality of such use has led many to consider them a necessity to man, and that they are God's gifts to him, and, if rightly used, are of physical benefit. It may not be a perversion of judgment to consider that their wide-spread popular use is greatly due to the efforts of the race to gain anæsthesia for, and distraction from, those pains and punishments that are the inevitable sequence of departure from hygienic and social law on the part of the individual, his ancestry, and society in general.

The taste for these things is acquired, not natural, though the acquisition may be through hereditary influence. An idea is held by a majority of even fairly intelligent individuals that there is a justifiable, harmless, and even beneficial use of these substances by the general public, though acknowledging that beyond a certain indefinite line this use becomes an abuse.

I believe that there may occasionally be cases in which the physical benefits derived from their use outweigh the injury they inflict, but I think this use is very much less than is generally supposed, and if we can judge from the preponderance of evil effected by such use, these substances ought to be considered as the materialized curses of God rather than as beneficent gifts. The prevalent idea as to the beneficent nature of these substances I consider to be a delusion that can only be explained upon the hypothesis that there is a wide-spread lack of appreciation of the fact that, though they may have an immediate pleasant and agreeable effect upon the body, their injurious effects are cumulative, and are usually ultimate, and so distant as to be difficult of direct connection with their cause to ordinary observation. The more moderate the use of these substances the more remotely is the effect removed from the cause and more difficult of detection. That the ordinary habitual, so-called moderate use of stimulants and narcotics such as tea, coffee, tobacco, and alcohol is, in the vast majority of cases, really an abuse is a proposition that I think should be admitted by all who have given the subject an unbiased study.

The idea that the user of tobacco and other injurious substances will be cognizant of the injury inflicted by habitual use in moderate or even excessive amounts is an undoubted fallacy. The daily, weekly, or monthly injurious effect may be entirely unobservable to even trained physicians, and yet the ultimate cumulative effect may be fatal. I can instance numerous cases of physicians directly fatally injured by the use of alcohol, who have never had the slightest cognizance of the fact; and I can also instance cases of grave disease from the use of tobacco where the patients never have believed that tobacco has been the cause of their troubles, even after an unanimous opinion to that effect has been expressed by a number of competent medical advisers. The habitual consumption of opium, in doses of any amount, is generally admitted by most people to be physically injurious outside of its strict medicinal application. Moderate indulgence in alcohol as a beverage is beginning to acquire a very wide-spread evil reputation. But how about tobacco? Tea and coffee we can confidently leave to the consideration of a somewhat remote posterity of a considerably advanced intelligence and elevated hygienic ideals.

The relation of tobacco to the physical welfare of man can only be fairly estimated by viewing the subject in its broadest aspect; by considering its effects upon the race as a whole rather than in individual cases; by taking into consideration economical and other social conditions that at first sight might be considered as having little relevancy to the medical side of the subject. But there can be no just consideration of the matter otherwise. The direct deleterious effects of the immoderate use of tobacco are readily observable; but the great bulk of the evil physical effects due to the moderate use of this plant are of an intermediate nature and not directly noticeable; nevertheless, they are real, and worthy of medical attention. The plainly marked results following the use of tobacco in relatively large amounts seem to be due to quick and extreme interference with nutrition, and a diminution of function of all kinds, which may be represented by anything from a slight decrease of appetite and digestive ability up to a complete loss of function of almost any important organ. Tobacco has stimulating as well as narcotic properties, but, as ordinarily used, its stimulating effect appears to be slight as compared with its narcotic influence. In this respect it differs from alcohol, the use of which, owing to the usual method of introduction in large amounts through the stomach, produces directly, by stimulation, readily noticeable structural changes. But with tobacco the direct evil results are mostly of a functional character, and are more generally diffused, owing to the usual slow manner of introduction into the body. These two properties have an effect upon the body in moderate use as well as in immoderate use, the effect being simply in proportion to the quantity used, though the effects of moderate use may not be measurable by ordinary means. It is easy to see the effects of large amounts of tobacco in the stunted growth of adolescents; in functional cardiac disorders; in intellectual sluggishness, loss of memory, and color-blindness; in loss of appetite, and other neuroses of motion, and marked blunting of various functions of sensation, and in degeneracy of descendants; but that lesser evils are produced must be proved mostly by inference, circumstantial collateral evidence, and analogy.

The greater evils that are the outcome of a moderate use of tobacco are probably due to prolonged slight interference with nutrition, and consequent general decrease of vitality which renders the individual more susceptible

[1] Ibid., p. 93.

through indirect influence to the invasion of disease, and which lessens the capacity for productive effort.

It is of course difficult, and perhaps even impossible, to accurately estimate the value of tobacco to the race; but let us glance at the pros and cons, and then each one can roughly estimate for himself. Tobacco may be used medicinally, but it is a dangerous and uncertain remedy, and it probably has not one medicinal use that cannot be more suitably met by other remedies. One can readily imagine easier digestion as the result of the sedative influence of the after-dinner cigar upon a disquieted nervous system, especially if the coincident irritation of alcohol and coffee have need of correction; but it can also be imagined that in most of such cases the remedy has been the cause of, and will further increase the disordered condition, and that nutrition of deficiently nourished nerve-tissue is rationally indicated rather than partial narcotization. There then remains, so far as I can see, the solace of moderate anæsthesia and, occasionally, of occupation for idlers, as the only items that can be placed to the credit of tobacco. There certainly are individual cases where such usage may be more provocative of physical benefit than evil, but, before judging for the race as a whole, compute the other side of the question.

Tobacco injures the general health of the public through the economic loss caused by its consumption. The people of our country spend annually over seven hundred millions of dollars for tobacco—twenty per cent. more than is spent for bread. This sum represents only a minor part of the cost of the toabcco-habit to the country. The crop is immensely exhaustive to the soil. Its culture has blighted whole sections of fertile territory. In the time consumed by the producer and the trader in its production, manufacture, and sale, and by the consumer in its use, and by the general interference with vital activity and consequent decreased productive capacity, there is represented an almost unimaginable sum of money. Certainly the people at large are not so well fed both as to quantity and quality, or so thoroughly clothed, or so hygienically housed that they can afford this gigantic economic waste.

There can be little doubt that if the people had sufficient intelligence and moral strength to taboo tobacco, this comparatively senseless outgo would be largely devoted to supplying these and other necessities of an exalted health-status.

Tobacco injures health through its moral effects. The tobacco-habit is certainly a dirty, and frequently a disgusting habit, and encourages other dirty practices. Its use tends to make men cowardly, irritable in temper, and low in spirits. It blunts ideas of purity and courtesy, leading to invasion of the rights of others. It is presumed that few medical men would visit a delicate, sensitive patient after saturation with the "fragrant" effluvia of onions, but thousands whose systems are saturated with nicotine and who reek with nauseating odor do not hesitate to inflict their presence on sick or well. The time will come when the tobacco-user will not be allowed to poison the atmosphere that is the common property of the public—will not be allowed to force the inhalation of nicotine upon the general public, to say nothing of being allowed to poison the infants and women in his own family. What would be said of a man who introduced poison in any degree into the food or drink of his child? Is the poisoning of the household atmosphere by the ignorant, thoughtless, or selfish smoker morally more defensible? Tobacco injures health through hereditary influence The tobacco-user begets, more certainly than the non-user, puny children with disordered nervous conditions. Luckily for our race the women, who have the most important prenatal influence in guarding its physical well-being, are practically non-users of the plant. The general health-status of the race is improving, not because the use of tobacco or the indulgence in other questionable practices is harmless, but because, among other things, of the great advance in general intelligence and knowledge of hygienic law.

A person, or the public in general, may practise an injurious habit, and yet more than counteract its influence by opposing beneficial practices.

Horace Greeley said, "Show me a drunkard who does not use tobacco, and I will show you a white blackbird." In this country, where dietetic drinking habits are not common in the family, the weakening of moral fibre by indulgence in tobacco is usually the introduction into the round of vicious indulgences, and thus directly or indirectly affects health. Smoking induces dryness of the mucous membrane of the mouth and consequent thirst. The partially paralyzed nerve-terminals want something more stimulating than water to afford relief. Furthermore, blunted appetite induces deficient nutrition, and consequently there is a call for some "pick-me-up;" hence we find that the use of tobacco tends to the habitual use of alcoholic beverages, and there are very few habitual users of alcohol who escape without structural injuries to the body as well as perversion of its functions. Decrease of vital activity in all the tissues of the body marks the use of tobacco. The tendency is toward functional paralysis, though occasional signs of stimulative irritation are to be noticed, especially in the respiratory passages. The interference with intellectual activity is marked. It is said that during a period of fifty years no tobacco-user stood at the head of his class in Harvard. The accumulated testimony of investigating observers is conclusive that, other things being equal, users of tobacco, in schools of all grades, never do so well in their studies as non-users.

One head of a public school said he could always tell when a boy commenced to use tobacco by the record of his recitations. Professor Oliver, of the Annapolis Academy, said he could indicate the boy who used tobacco by his absolute inability to draw a clean, straight line. The deleterious effects of tobacco have become so clearly apparent that we find its sale to minors is prohibited in France, Germany, and various sections of this country. It is somewhat a question if, at the present time, the race is not doing itself more injury by its use of tobacco than it is with alcohol, because of its more universal use, particularly by youth, and because of the respectability of the habit which comes of its use by a certain intelligent part of the race, including teachers of morals and physics, and even temperance reformers. There is a wide-spread sentiment in existence that it is not a respectable thing to be even partly paralyzed by alcohol, but how few there are who consider narcosis as in any way connected with the use of tobacco. Its effect is more diffused and masked, and is not so acutely serious in individual cases, but through its interference with vital activity, tobacco is probably more generally injurious to the race than alcohol.

The editorial fiat of "too long" prevents a full exposition of the subject, but, in closing, let me say I hear millions of tobacco-users ask, "Why, then, was this plant given to man, if its general effects are so decidedly evil?" The question presupposes design in creation. Without subscribing to this theory, or pretending to have solved the mystery of the presence of evil in the world, the answer may be suggested that the overcoming of many seductive evils becomes to man a means of his progressive higher development. Of one thing I am convinced, that the physical development and welfare of man is interfered with in strict sequence to his consumption of substances that are unnecessary for his nutrition—stimulants and narcotics inclusive.

THE SALE OF PRACTICES.—The French courts have decided that a physician cannot legally sell his practice, on the ground that a medical practice is not an article of commerce. A contract to abstain from practising in any given neighborhood is, however, valid, and to be capable of enforcement at law.

Clinical Department.

AMPUTATION OF THE THIGH OF A THREE DAYS' OLD GIRL.

By J. W. MADDIN, Jr., M.D.,

NASHVILLE, TENN.

On Monday, March 11th, I was called to see a baby which had just been delivered by a midwife, the child of German parents; the father, a vigorous healthy man, a cooper by trade, and the mother, a large, muscular woman, weighing about two hundred and twenty-five pounds. Upon examining the child it was found that the right leg had been the seat of mortification, or dry gangrene, up to about the junction of the middle with the upper third of the thigh. From the knee down, the bones were bare of any covering, the foot was disarticulated from the leg, and seemed to be undeveloped, swarthy, mummified tissue. It was connected to the leg only by a few shreds of mortifying tissue.

I called Drs. T. L. and J. W. Maddin to see the case with me, and consult as to the best thing practicable to be done in such a case. It was at once decided that nothing but amputation was left to be done, but that the operation should not be performed till nature formed her line of demarcation, lest gangrene should attack the stump and make matters more complicated than they were already. At the end of three days there was an indistinct line of separation of the healthy from the gangrenous tissue, and the operation was resorted to immediately. The transfixion operation was the one selected, and was performed just below the hip-joint, making use of the anterior and posterior flaps, and it was with difficulty that enough healthy tissue to cover the wound was obtainable, so far up the thigh had the gangrene extended.

No tourniquet was used, but the bleeding was controlled by compressing the artery, where it passes over the pelvic bones, with the finger. The tissues were dissected back to within about an inch of the head of the femur, and the bone sawed into at this point. The operation was completed in the usual way, tying the arteries with silk ligatures and closing the wound by bringing the flaps together with silk sutures. No drainage was provided for, other than that caused by allowing the ligatures to pass out of the lower end of the wound. The wound healed very promptly, with but little suppuration or discharge; the dressings were renewed every two days, and at this writing, twenty days since the operation, there is only a small part of the wound not closed.

Ether was the anæsthetic used in this case, and was very skilfully administered by Dr. J. E. Harris, a very remarkable fact in connection with the anæsthetic being that nearly a half pound of Squibb's ether was used before sufficient anæsthesia was accomplished to proceed with the operation, and it required thirty minutes to accomplish this amount of anæsthesia.

The child rallied from the ether and the shock very promptly, and has had no bad symptoms since, except occasionally to refuse to take the breast, during which time it was nourished by breast-milk taken from a spoon.

I am indebted to Drs. J. L. Watkins and Henry Morris for able assistance in the operation.

At the present time the child presents every prospect of recovery, although at the time of the operation it was hardly hoped that a favorable result could be accomplished.

The only cause which I could assign for the condition of the leg at the time of its birth was the wrapping of the cord around the limb in the early months of intra-uterine life, or else to a fall which the mother sustained on Christmas day, being just eighty days before delivery. In this fall she struck the abdomen very forcibly on the ground.

This case is unique in the extreme early age at which the operation was performed (the child being only three days old), and in the fact that it required nearly a half pound of ether and thirty minutes of time to produce anæsthesia, which was never profound at any time.

MEMBRANOUS RHINITIS.

By ISIDOR GLUCK, M.D.,

OCULIST AND AURIST TO THE ACADEMY OF THE SACRED HEART AND BROWNELL HALL, OMAHA, NEB.

I venture to call attention to a disease concerning which little has been written, and apparently little known. The only publication I could find on any affection similar to the one here described is a paper by Frank Hamilton Potter, of Buffalo, N. Y., read before the State Medical Society of New York, February 5, 1889. The characteristic feature of the affection described in the above paper is the formation of a membrane with hardly any constitutional symptoms. The duration of the disease, notwithstanding the most energetic treatment, both constitutional and local, according to Dr. Potter, was about three weeks. The local treatment consisted in applying a solution of cocaine and tamponing the nose.

Membranous rhinitis is a term which designates an affection of the nasal passages, independent of diphtheria, manifested by an acute inflammation and by the formation of a membrane caused by exudation and covering a part of the turbinated bones. Generally both sides are affected at the same time.

The onset in a series of cases which I have observed was sudden, and simulated an attack of hay fever. There was great swelling and redness of the mucous membrane. On closer inspection of the nasal passage there could be seen a strip of white substance blocking up the space between the septum and upper and middle turbinated bones. The secretion of the nose was of a sticky, but clear, transparent character. There was no marked elevation of temperature. Patients complained of a tired feeling and general discomfort. No history of previous attacks of the same character, only susceptibility to colds, and in some cases to catarrhal affections of the nasal passages. When the membrane is seized with the intention of removing it, only the part seized tears loose. It appears to be a milky white, flat mass, with a large quantity of moisture on both sides. On removal there is left a bleeding surface, which I believe is not caused by the forcible separation of the membrane from its base, but rather from the contact of the instrument with the inflamed parts. On the next day the membrane is found reformed. The pharynx and larynx are not involved, excepting that the soft palate is relaxed and the uvula elongated.

The cases observed occurred in a succession of two years, during the months of April, May, and June. The patients applying for treatment had been suffering from a few days to as many weeks, some believing themselves to have a bad cold of an unusually long duration, others thinking of hay fever, although it was too early in the season. I first applied a four per cent. solution of cocaine in a very fine spray, avoiding the use of a coarse spray on account of its causing irritation and violent sneezing. Cocaine had very little effect in these cases. It loses its power of causing contraction of the tissues in proportion to the intensity of the inflammation present.

Assuming that the disease was local, and the membrane formed by exudation, I therefore ventured to try a drug, viz., atropine, which I knew from experience has a power of checking exudation, and on this I based the treatment.

Atropine applied locally accomplished all I expected. It acted as a local sedative, caused contraction, and checked exudation immediately.

A New Pun at the Paris Jockey Club: "Le malade prend l'avis du docteur et le docteur prend la vie du malade!"

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THE TREATMENT OF INEBRIETY IN THE EDUCATED CLASSES.

IT requires but little reflection to enable one to understand that the treatment of inebriety should be along very different lines according to the varying social conditions of the patient. This is true, indeed, of nearly all diseases the types of which often differ widely according to the surroundings of the patient, but of none is it more true than of nervous affections, and especially, perhaps, of inebriety. The inebriate who has been born and has passed all his life in the slums of a large city is very unlike, in both moral and physical constitution, the well-to-do gentleman, whose surroundings are the most refined, and who deplores his infirmity and shudders to think of the world of his associates becoming sharers in his secret.

The management of cases falling in the latter category is the subject of a communication read before the London Society for the Study of Inebriety, on January 1, 1889, by Mr. James Stewart. The author starts out with the assumption that in every inebriate there is an absolute degeneration of brain elements and that upon this depends the loss of will-function. This being admitted, the treatment should be so directed as to assist nature in her efforts to regenerate the injured nerve-tissue, to build up again the brain elements through the medium of which the will-power and other functions are exercised. In order to do this total abstention from alcohol is absolutely essential, and nothing containing alcohol, not even the lightest wine or beer, is to be permitted at any time even during the intervals of the drink-craving. The will of the patient being weakened, he must live under the constant supervision of the physician. For this purpose the author advises a residence in the country, in the home of some medical man. The latter should not be in active practice, but should be in a position to devote his entire time to the patients, not more than five or six, entrusted to his care. If there be a greater number of "guests" than this the domestic family feeling will be destroyed, and the inebriate will come to regard himself as in an asylum rather than a private house.

The life at the home is to be made as little irksome as possible, and amusements of various sorts should be provided. The patient, if he have no literary tastes or no hobby, such as painting, wood-carving, or the like, should be induced to take up something like photography which will consume much of his time and lead him out frequently into the open air. He should also be encouraged to take up pedestrianism, being accompanied in all his walks, of course, by the physician or his deputy, and should be taken frequently to public meetings, concerts, lectures, cricket-matches, and the like. The physician will be greatly aided by a pleasant and energetic wife, or other female members of the family, who may assist in the entertainment of the guest in the home circle during winter evenings and at other times. If the patient is a lady the help of the physician's wife is, of course, absolutely indispensable.

This is briefly the plan of treatment advocated by Mr. Stewart for the intelligent inebriate who is earnestly desirous of overcoming his infirmity and is willing to submit for a period of a year to a moderate degree of restraint, putting his will to a certain extent in the keeping of the physician. But, and especially at the beginning, something more is needed than mere occupation. It is necessary to moderate as far as possible the craving for drink, which returns with almost irresistible force at frequent intervals, and also to overcome the depression from which the inebriate is usually suffering when he first reaches the house. For the latter it will be necessary to administer, at intervals of an hour or two at first, egg and milk, beef-tea, milk and lime water, soda and milk, and other easily assimilated beverages. The sleeplessness from which almost all inebriates suffer at first is best treated by a draught composed of twenty minims of the solution of bimeconate of morphine with ten or fifteen grains of chloral, alternated for a few nights with other hypnotics. Sulfonal will doubtless be found very serviceable in such cases. The author protests against the idea that by the exhibition of drugs such as capsicum, perchloride of iron, or strychnine, the craving for alcohol may be destroyed or kept under. It may perhaps be smothered for a while, he says, but he believes that by this treatment the physician is only substituting one enslavement for another. The same is true to a certain extent in respect to aerated beverages. Without absolutely interdicting the latter he recommends his patients to do without them, and to drink plain water at their meals and take plenty of milk with either tea or coffee, or, as he prefers to either of the latter, cocoa. The diet should be plain and unstimulating and all condiments should be avoided at meals. If the patient suffer from pain in the stomach after the ingestion of food he should take large draughts of very hot water twice or three times a day. Smoking should be reduced if it cannot be entirely given up.

The author summarizes his conclusions, which he has arrived at as the result of constant clinical study during the last twelve years, as follows:

1. Drunkenness and inebriety ought not to be confounded.

2. Inebriety is a lesion of the brain which has gone so far as to affect the will-power.

3. Successful treatment based on this pathological dictum must include the absolute cessation of alcoholic drinking.

4. There is no danger in the sudden and complete withdrawal of alcohol if the case—no matter how severe—be in the hands of a skilful physician able to personally direct the hourly treatment from the first.

5. The physician undertaking the charge of such cases

ought to be a total abstainer, as well as everyone living under his roof, so that moral treatment by example may supplement therapeutic remedies.

6. Permanent recovery need not be hoped for unless both lines of treatment be pursued, systematically, during an uninterrupted period of twelve months in a "Home" from which every beverage containing the smallest quantity of alcohol is absolutely excluded. The first four months barely suffice for the getting rid of the stomach and other troubles which are the result of the alcoholic poison; at the end of the second period of four months the patient begins to feel less the want of alcohol; by the end of the third period he has begun perhaps to understand that life may be enjoyed and vigorous health secured without stimulants.

7. So-called "cures" effected by bark, strychnine, iron, and other drugs have not proved permanent.

8. The permanence of a cure depends greatly on the after-treatment pursued subsequently to the patient leaving the "Home." The family of the inebriate, or the household of which he or she is to form a part, ought all to become total abstainers, no alcohol being allowed under any circumstances into the house except as a drug prescribed by a medical man and dispensed in a medicine bottle.

THE PRESENT ASPECT OF THE IODOFORM QUESTION.

The triumphant march of the germ theory received some four years ago an unexpected and, it seemed at the time, a final check. Just when it seemed to have been surely determined that unhealthy action in wounds was caused directly by the entrance of disease germs from without, and that the exclusion and destruction of germs would secure rapid and normal repair, the startling discovery was made that iodoform, which was widely used as an antiseptic, and which evidently promoted greatly the healthfulness and healing of wounds, was not a germicide, and might in fact be the vehicle in which germs were carried into the wound. In an article in the *Annals of Surgery*, March, 1889, Dr. Van Arsdale discusses the matter fully, showing what interesting discoveries have resulted from the refusal of iodoform to fit into the old theory, and giving the literature of the subject.

Investigation has proved that disease germs are aided in their septic work by certain chemical substances called ptomaïnes, which are formed in the tissues as a result of their action upon the tissues. Iodoform, while it does not destroy nor seriously hinder the germs, does destroy the ptomaïnes. Thus, we may suppose, the tissues, not being enfeebled by the action of the ptomaïnes, are enabled either to destroy the germs or to resist their malign assaults.

Clinically, certain facts have been developed which are of practical value, whatever may be the fate of the scientific theories involved. In dressing wounds the surgeon must hereafter use two different sets of antiseptics. He must first seek, as far as possible, to exclude disease germs or to render them inactive, and for this purpose he must use germicides, such as corrosive sublimate. He must next endeavor, by applying agents like iodoform, to prevent the formation of poisonous chemical substances in the wound, or to decompose them and render them inactive if once they have been formed. These latter agents, if they, like iodoform, contain disease germs, must be disinfected before they are applied. Iodoform should be washed in corrosive sublimate solution. It should be brought into as intimate contact as possible with the surface of the wound, and after its application the wound should be covered with germicide and protective dressings.

NOTES ON THE USE OF PARALDEHYDE.

In an article upon the treatment of mental diseases (*American Journal of the Medical Sciences*, April, 1889) Dr. Clouston, of Edinburgh, gives his experience with paraldehyde. For two years he has used it very extensively and he likes it far better than any other pure hypnotic. Very often the patient is asleep in five minutes after the drug is given. In one hundred cases it caused sickness in only two, headache and disagreeable feelings in one, and a "general discomfort" in one. It does not interfere with the appetite for food next morning, nor disturb the stomach or bowels. He believes that while the first part of the sleep given by paraldehyde is a drug sleep, the rest of the sleep is natural sleep. In some cases it restores to the brain the habit of sleep, and it may be discontinued without danger of relapse into old ways, and without leaving a drug habit. It is of no use, but rather injurious, when given in the day-time. The dose varies enormously according to the case. Too small doses may excite the patient. He begins with one drachm or forty minims and goes up to two drachms in ordinary cases. In very many cases of confirmed insomnia, in melancholia, and in acute mania, three, or even four drachms are required. He has given to one patient, four drachms every night for a fortnight. He gives it in tincture of quillaya, with a few drops of chloral ether, in cinnamon water. Its bad taste cannot be concealed and patients smell of it for twenty-four hours after a dose. In what dose it becomes poisonous is uncertain. A nurse gave an ounce to a delicate patient, producing stertorous sleep for twelve hours, but no interference with the heart's action or the reflexes. The patient recovered. Because of its volatile nature it is quickly eliminated by the lungs and also by the kidneys. In cases of mania he often adds a drachm of one of the bromides to the evening dose of paraldehyde, and in very restless cases a drachm of "bromide." He thinks he has never injured a patient nor retarded recovery by even a prolonged use of paraldehyde.

CONTINENCE AS A PREVENTIVE OF SYPHILIS.

In closing his remarkable series of lectures on "Syphilis of the Nervous System," Dr. William R. Gowers, one of the foremost of English neurologists, makes these very vigorous statements:

"Do we do all we can—and our profession gives us power that no other has—do we do all we can to promote that perfect chastity which alone can save from this, and from that which is worse? The opinions that on pseudo-physiological grounds suggest or permit unchastity are absolutely false. Trace them to their ultimate basis and they are groundless. They rest only on sensory illusions, and 'there are no liars like our own sensations.' Rather, I should say, they rest on misinterpretations, always biassed and often deliberate. With all the force that any knowledge I possess can give, and with any authority I may have, I assert—as a result of long observation and consideration of facts of every kind—that no man was ever yet the slightest degree

better for incontinence; that for it every man must be the worse morally, and that most are worse physically; and in no small number the result is, and ever will be, utter physical shipwreck on one of the many rocks, sharp, jagged-edged, or on one of the many banks of festering slime that are about his course, and which no care can possibly avoid. And I am further sure that no man was ever anything but the better for perfect continence. My warning is: Let us beware lest we give even a silent sanction to that against which I am sure, on even the lowest grounds that we can take, we should resolutely set our face and raise our voice."

It is at least impressive and refreshing to hear convictions so positively and eloquently expressed upon this subject. The tendency, we know, in these days of physiology and material hygiene, is to excuse or even permit incontinence in man, on the ground of its physical necessity. A great deal of so-called physiological craving comes, however, from systematic cultivation of or indulgence in lewd emotions, when a systematic repression of the animal instinct and cultivation of faculties that distinguish man would produce a very different condition in the sexual instincts.

THE RESPIRATION OF WOMAN.

SOME two years ago Dr. Thomas J. Mays, of Philadelphia, studied the type of respiration in eighty-two North American Indian girls, varying in age from ten to twenty-two years. He found that the abdominal type of breathing was very marked in every case and came to the conclusion that the costal type usually observed in civilized woman was artificial, and the result of modern dress.

Dr. J. H. Kellogg, following up the same line of inquiry, has since then examined the mode of respiration in several Chinese women, whose dress does not constrict the waist, and in Indian women. He found also that they showed the abdominal type of breathing. He also found in a number of cases that civilized women who wore no corsets had relatively good abdominal breathing, and that this was prevented when they put on a corset. He also produced a costal type of breathing in man by putting him in a corset.

Dr. Kellogg's conclusions are also to the effect that the so-called costal type of breathing is an artificial and injurious one. He also found, by means of specially constructed instruments, that the respiratory movements produced certain movements of the pelvic viscera, more especially the uterus, and that these movements were lessened by the constriction of the corset. He found, however, that the uterus was lowered in the pelvis from .2 to .5 of an inch by the application of the corset. He states, what anatomists have long known, that the round ligaments contain muscular fibres; but he adds that they tend to contract with the respiratory movements, raising the uterus up, while the abdominal viscera press it down. By the wearing of corsets these muscles fall into disuse, atrophy, and their function is lost.

The facts above presented are apparently very strongly in favor of the artificiality and, by inference, harmfulness of the costal type of breathing. But it must be remembered that Hutchinson found this type marked in twenty-four girls, of ages varying from eleven to fourteen years, who had never wore tight clothing around the waist. Gibson states that the differences in types of breathing begin as early as the tenth year; while Riegel asserts much the same thing.

There seems to be considerable reason to believe, therefore, that the costal type of breathing has at least become established in civilized women; and it has not yet been proved that it has an injurious influence. The harm done by tight lacing is admitted, but it may be questioned whether the costal breathing is not even an improvement on the abdominal type.

A NEW INTERNATIONAL MEDICAL CONGRESS.

THE medical profession of the world will wake up in a few weeks to the fact that their Parisian colleagues are quietly organizing an independent International Medical Congress, to be held in Paris during the coming Exposition. Nearly every week a new announcement of meetings of medical organizations having an international character is received. Among the latest are the Congrès International d'Assistance Publique, and the International Congress of Therapeutics and Materia Medica. The former organization meets on July 28th, under the presidency of M. Roussel. It will consider questions of the management of hospitals and of the care of defective and dependent classes. The Congress of Therapeutics meets the same week, August 1st to 5th.

VACCINATION AGAIN.

WE can hardly understand the extreme solicitude our English medical contemporaries always feel over the subject of vaccination. Any attack upon, or criticism of, this time-honored mode of prophylaxis arouses at once an elaborate procession of statistical editorials and vaccinal apologetics. One can appreciate and allow for a reasonable irritability over the silly discussions of Miss Frances Power Cobb and writers of that class.

But an equally extreme degree of agitation has been shown over the contribution to vaccination somewhat recently made by Dr. Charles Creighton in the last volume of the "Encyclopædia Britannica." This is an article written in what appears to us to be an independent and critical spirit; and his chief fault, as will be seen, is that he has only studied thoroughly one part of his subject.

The writer does not take an anti-vaccinationist's standpoint exactly, but rather seems desirous of showing that the facts of the work of vaccination should be interpreted in the light of modern epidemiology, as well as of vaccination prophylaxis. All great plagues have had their rise and decline, and small pox is no exception. Dr. Creighton attacks also, very sharply, the Jennerian theory of cow-pox, viz., that it is small-pox in the cow, and is derived from the equine disease known as "grease." There is, according to Creighton, no identity, or even affinity, between these diseases, and, in fact, all the theories of vaccination he seems to regard as fanciful.

The practical value of small-pox, apart from any theory, is considered separately. Taking the question of its prevalence in general, Creighton inclines, as we have stated, to believe that its diminished activity is due to epidemiological laws rather than to cow-pocking. As regards individual prophylaxis he brings forward rather meagre statistics, but admits a somewhat greater prevalence and virulence among the unvaccinated.

On the whole, one is inclined to regret that Dr. Creighton, having started out to present his independent views, did not take time and space and material sufficient to defend them. The sections of his article on the practical value of vaccination are disappointing, viewed from a purely objective stand-point; while his reference to the work of Jenner is lacking in candor, if not actually in knowledge.

In very marked contrast to Dr. Creighton's article is the one on the same subject by Dr. Samuel W. Abbott, in the recently issued volume of "Wood's Reference Handbook of the Medical Sciences." The discussion of the protective value of vaccination is here entered upon most exhaustively, and there are plenty of data opposing Dr. Creighton's epidemiological theory.

We have not space nor inclination to introduce the details of a pro-vaccination argument here. Vaccination has cut down small-pox too rapidly for it to be explained by a natural law of decline. It is a measure of prophylaxis which every intelligent man who studies the question without bias must admit is most potent and beneficent.

The anti-vaccinationists may have some actual influence in England, to us they appear to be simply the victims of hysterical rhetoric and statistical hallucinations.

THE PROMOTION OF WEEKLY REPOSE.

THE season of the year is approaching when church attendance declines and the carnival of Sunday excursions begins. No city in the world works harder to get what it thinks is rest and recreation on Sunday than New York. Cut off on three sides from the mainland, nearly all the objective points sought for by the Sunday excursionist are reached by ferries or boats, the trips generally involving a ride on an elevated road, the crossing a ferry, and a railroad trip, with, perhaps, a stage drive at the end. No resting-place can be reached short of an hour or an hour and a half of hard travel, generally in crowded conveyances. The result is that the Sunday excursionist toils so much for his rest that the total result is a decidedly negative one.

A society for promoting weekly repose in New York city during the summer would find large opportunities for its labors.

The recent organization of an International Congress for Weekly Rest, to be held in Paris during the coming Exposition, is suggestive in this connection, and we trust that it will have some New York delegates.

THE PRACTICAL STUDY OF THE INTESTINAL JUICES.

IN a preliminary communication to the *Centralblatt für Klinische Medicin*, No. 6, 1889, Dr. J. Boas, of Berlin, states that by certain manœuvres he has been able systematically to obtain the intestinal juice in living patients for purposes of study. By intestinal juice he means a mixture of the pancreatic juice, the bile, and the succus entericus.

His method is, after the stomach digestion has ceased and that organ is empty, to rub the abdomen from the region of the right hypochondrium toward the median line. This gradually relaxes the pyloric sphincter, and after a time the intestinal juices enter the stomach in considerable amount. These are withdrawn with the stomach-pump. In twenty cases the amount of secretion thus obtained has been from 15 to 200 c.c., the average being 40 to 50 c.c. The fluid withdrawn is feebly alkaline and possesses all the properties of the intestinal juices, viz., it digests proteids, turns starch to dextrine and maltose, and emulsifies fat.

In case a mixture with gastric juice is apprehended, the stomach may be first washed out with a weak alkaline solution.

Dr. Boas is confident that in his new procedure we have an additional means of examining the condition of the digestive tract and securing more positive data for the treatment of its disorders.

It is somewhat to be regretted that in his present communication he does not give us more details of the procedure which he employs. These will, we are told, be furnished later.

REGULATION OF MEDICAL PRACTICE IN PENNSYLVANIA.

THE State of Pennsylvania is in the throes of medical legislation. The bill now before the Legislature to establish a board of medical examiners has been amended until, at last accounts, its usefulness, if it became a law, would be quite seriously affected. It provides that the representatives of the regular school shall never form a majority of the Board, and it compels all the State Medical Colleges to adopt four-year courses. The former provision is an absurd and unjust concession to decaying and dishonest superstitions.

The latter provision is a little premature, and would only send a rush of students to the cheap two-year medical colleges of this city.

News of the Week.

DR. FORDYCE BARKER'S PARIS DIPLOMA.—The numerous friends of Dr. Barker will read with great pleasure the facts concerning the reception of his heretofore much-talked-of Paris diploma as related in Dr. Morrow's interesting letter in this issue. Dr. Barker's assertions were never doubted, but it is gratifying, even at this late date and in this strangely roundabout way to have them so directly and positively corroborated. We congratulate Dr. Barker accordingly.

THE INTERNATIONAL MEDICAL MISSIONARY SOCIETY held its eighth annual meeting in this city on April 21st. The Society educates medical missionaries, and, we are told, runs six dispensaries in this city.

THE INTERCOLONIAL MEDICAL CONGRESS, which recently had a successful meeting at Sydney, has adjourned to meet at that place in the year 1892.

INHALATIONS OF CHLOROFORM (Clemens), the artificial production of rheumatism by transfusing the blood of rheumatics (Lanigan), and the internal use of Homeriana (Laskoff) are among the latest specifics for the cure of phthisis pulmonalis.

THE PNEUMONIA COCCUS AS THE CAUSE OF ACUTE OTITIS MEDIA.—Professor E. Zaufal (*Prog. Med. Wochenschrift*) reports four cases of acute otitis media in which the diplococcus pneumoniæ was the only microorganism found in the discharges.

THE GERMAN SURGICAL CONGRESS met in Berlin this past week.

DR. CRAIK has been appointed Dean of the Medical Faculty of McGill University.

THE MEDICO-CHIRURGICAL COLLEGE of Philadelphia graduated a class of thirty.

THE COLUMBUS MEDICAL COLLEGE graduated a class of twenty-one.

THE VARIED AND READY TALENTS, the wide linguistic knowledge, and the apt and verbifacient resources of the gentlemen on the staff of THE MEDICAL RECORD are facts well known to our readers, a just enumeration of which would put a severe strain upon eulogistic polyonomy. It may not be so well known that one talented prop of our medical journalism has mastered Chinese, written a popular grammar and phrase-book of that language, and can write a prescription or decorate a tea-chest with mysterious and polymorphic characters that apparently breathe the deep joy of an ancient and Celestial origin.

SUING A STEAMSHIP COMPANY FOR INEFFICIENT MEDICAL SERVICE.—Miss Alice M. Allan has sued the State Steamship Company for alleged injuries sustained through the administering of a poison to her by an ignorant surgeon. Her story is that she asked for quinine, and the surgeon gave her a dose of mercury, which poisoned her.

INTERNATIONAL MEDICAL CONGRESS AT PARIS.—In response to some further inquiries regarding the International Medical Congress to be held at Paris this summer, we would say that there are to be eleven International Congresses, under government patronage, bearing directly on medical and sanitary matters. They are as follows: 1. Mental Diseases. 2. Forensic Medicine. 3. Diseases of the Ear and Throat. 4. Skin Diseases and Syphilis. 5. Climatic Treatment of Disease. 6. Therapeutics. 7. Hygiene and Demography. 8. Veterinary Medicine. 9. Poor Relief. 10. Dental Surgery. 11. Homœopathy. Besides this there will be a Congress on Criminal Anthropology, on Temperance, on Improving the Condition of the Blind, and on Securing Weekly Rest.

AN INTERNATIONAL HYGIENIC CONGRESS.—This Congress, which met at Vienna last year, will assemble in London in the year 1891, and already arrangements are in progress for its reception. A Provisional Committee has been formed, and a circular has been issued to all the leading public medical bodies, asking them to nominate representatives on the General Committee, which is in course of formation. The circular is signed by Sir Spencer Wells, Sir C. Cameron, Drs. Frankland, Humphry, and Mapother, Sir Douglas Galton, and Dr. Corfield.

THE BADGES OF PARISIAN STUDENTS.—The students of the various Faculties in Paris recently resolved to wear a distinctive form of headgear. In order to mark themselves off still more conspicuously from the non-academical multitude they have now adopted a special badge. Medical students are to wear a black and red rosette, with the tasteful device of a death's-head in the centre; students of pharmacy are to have a green rosette, with a silver palm tree, round which a golden snake is twined; while the law students have fixed on a black badge with a pair of scales in gold.

"DRUNAINE," the new Australian local anæsthetic, has recently been examined by Dr. Dixon, who finds it to be nothing but a mixture of oxalate of calcium with some phosphate.

THE ST. LOUIS POLYCLINIC is the name of another contribution to medical journalism and erroneous orthoepy. It is edited for St. Louis Post-Graduate School of Medicine, by L. A. Turnbull, M.D.

A NEW BUILDING has been added to Bellevue Hospital through the liberality of Mrs. R. H. L. Townsend, and through the agency of the New York Protestant Episcopal City Missionary Society. The building is three stories high, and situated in the rear of the hospital. It is in the nature of a reading-room and a chapel, in which the donor seriously requests that only the Episcopalian services be conducted.

WOMEN AS PHARMACEUTISTS.—The College of Pharmacy, at the Annual Commencement last evening, graduated one hundred and five young men, and three young women. Women ought to make good pharmacists, but we doubt if they will. There is a deep impression that they lack the sense of responsibility.

A LIBERAL GIFT TO ROOSEVELT HOSPITAL.—By the will of the late Wm. J. Syms, Roosevelt Hospital will receive $350,000. Of that amount $250,000 is to be used in the erection of a surgical operating theatre, at the easterly end of the lot on which the hospital stands. The theatre is to be under the direction of Dr. Charles McBurney, and to be called the "William J. Syms Operating Theatre of Roosevelt Hospital." The remaining $100,000 is to be invested, and the income applied to the expenses of the operating theatre.

DR. WM. F. WILSON, of Denver, Col., died on April 19th from an overdose of morphine.

THE INFLUENCE OF JABORANDI ON THE COLOR OF THE HAIR.—Dr. D. W. Prentiss, of Washington, reports a second case in which he thinks the use of jaborandi caused white hair to take its natural dark color again (*Ther. Gazette*). The patient was an old lady suffering from Bright's disease.

PROFESSOR NOTHNAGEL has been granted the title of Hofrath (Court Counsellor).

AN EPIDEMIC OF CEREBRO-SPINAL FEVER is said to be prevalent in Southern Texas. The disease runs a rapid and most malignant course, with very marked purpuric eruption.

A BUILDING FOR PHYSICIANS' OFFICES is to be built at Minneapolis. The building is to be eight stories, and cost $200,000. It is stated, incorrectly, that New York has two such structures. On the contrary, New York has none, and probably never will.

A FEE FOR SUCCESSFUL LAPAROTOMY.—Dr. Bernays, of St. Louis, was paid $500 by that city for successful laparotomy on a policeman who was shot through the stomach, duodenum, and jejunum.

DR. JOSEPH CHARLES PYNCHON, of Springfield, Mass., died on April 10th, from heart disease, after a sickness of several months. Dr. Pynchon was seventy-four years of age. He was a direct descendant of the founder of Springfield, and a nearly life-long resident of that city. He graduated from Williams College in 1836.

MYOPIA JUDICIALIS.—Dr. R. T. M——, of this city, writes: When the judge at Sioux City instructed the jury to find for the defendants in the "Faith Cure" case (THE MEDICAL RECORD, April 20th, p. 440), because it was no crime, under the laws of Iowa, for a person to pray for an afflicted neighbor, he ought to have been presented at the same sitting with the question which broke up the Squid Beach Debating Society, namely: "Is dig ging clams fishing or farming?" In a faith cure case the question is not as to whether it is right or wrong to pray for a neighbor, but rather the question as to whether praying constitutes sound and responsible legal or medical advice and management.

THE AMERICAN CLIMATOLOGICAL SOCIETY.—The next meeting of The American Climatological Association, Dr. V. Z. Bowditch, President, will hold its annual meeting in Boston, June 24th and 25th, just prior to the meeting of the American Medical Association at Newport.

ALABAMA HAS A MEDICAL COLLEGE, located at Mobile. So writes a correspondent, correcting a statement of ours in a previous issue.

MALPRACTICE SUITS IN CALIFORNIA.—California physicians seem especially subject to unfortunate and unjust libel suits. The latest victim is Dr. C. N. Ellinwood, Professor of Physiology in Cooper Medical College, who is sued for $5,000 damages by a young woman on account, as she alleges, of being treated for epilepsy when she had apoplexy, and by the mental anguish she had endured from being pronounced pregnant when she was chaste. We learn from the *Pacific Medical Journal* that there is a bill before the California Legislature requiring all persons who sue for damages to "put up" $500, first.

THE PERIODICAL LIST OF THE LIBRARY OF THE NEW YORK ACADEMY OF MEDICINE.—The journal list recently prepared by Mr. John S. Brownne, librarian of the New York Academy of Medicine, shows the richness of the library in periodical and serial literature, and will prove an important help to those consulting it. Part First contains a list of all the periodicals, transactions, reports, and serials published in the United States and Great Britain. All those classes of publications placed under the above heads in the Index-catalogue of the Surgeon-General's library are also included here. Hence, serial publications like "Ziemssen's Cyclopædia," "Wood's Medical Library," etc., are included. Mr. Brownne's list is evidently prepared methodically and with much care. It is an improvement in some details over that of the Surgeon-General's catalogue, as for example in indicating by figures that the periodical is still current. We trust that the annotation of "wants" will be borne in mind by those who consult the catalogue.

THE USE OF ALCOHOL IN BOND BY SCIENTIFIC INSTITUTIONS.—It may not be generally known that the internal revenue tax on alcohol is remitted under certain restrictions to various institutions of learning. The section of the Revised Statutes of the United States authorizing this remission, reads as follows: "The Secretary of the Treasury may grant permits to any incorporated or chartered scientific institution or college of learning to withdraw alcohol in specified quantities from bond without payment of the internal revenue tax on the same, or on the spirits from which the alcohol has been distilled, for the sole purpose of preserving specimens of anatomy, physiology, or natural history belonging to such institution, or for use in its chemical laboratory. Also to any scientific university or college of learning created and constituted such by any State or Territory under its laws, though not incorporated or chartered." In reply to a letter of inquiry from the Superintendent of Roosevelt Hospital, the acting Secretary of the Treasury defines the uses to which free alcohol may be put, in addition to the preservation of specimens, as follows: "1. In the manufacture in your chemical laboratory of tinctures, liniments, and other pharmaceutical preparations for use in the hospital wards and in the out-patient department. 2. As a lotion for bathing the afflicted parts of the patients under treatment in the hospital and out-patient department. 3. As an antiseptic wash by the surgeons before and after operations in both departments. 4. As an antiseptic solution for cleansing surgical instruments. 5. As an antiseptic solution for preparing and preserving catgut ligatures, to be used in surgical operations. 6. For burning in spirit-lamps, principally in the analysis of urine." It is distinctly provided, however, that the alcohol and the preparations mentioned shall be used only in the manner described, and shall never be sold to any person inside or outside the hospital.

Reviews and Notices of Books.

JAHRESBERICHTE ÜBER DIE FORTSCHRITTE DER ANATOMIE UND PHYSIOLOGIE. Sechzehnter Band, Literatur, 1887. I. Abtheilung. Anatomie und Entwickelungsgeschichte. Leipzig: Verlag von F. C. W. Vogel. 1888.

THIS annual volume is a carefully edited review of the literature covering the special subjects of anatomy and embryology.

INTRACRANIAL TUMORS. By BYROM BRAMWELL, M.D., F.R.C.P.E., F.R.S.E. With one hundred and sixteen illustrations. Pp. 270. Philadelphia: J. B. Lippincott Co. 1888.

THE present interest in cerebral surgery makes Dr. Bramwell's work a timely one. He has undertaken to give a systematic account of the symptoms, diagnosis, morbid anatomy, etc., of cerebral tumors. He bases his account largely on his own personal experiences and includes many reports of cases not hitherto published. The work has, therefore, a special value, but lacks some of the importance that would be attached to it if it attempted to cover in a complete way the whole subject of cerebral tumors. The illustrations, for which kind of work Dr. Bramwell has gained a deserved reputation, are numerous and are executed with great skill. A final chapter, on "The Surgical Treatment of Intracranial Tumors," by Arthur W. Hare, is hardly so exact or complete as it should be.

ELEMENTS OF PRACTICAL MEDICINE. By ALFRED H. CARTER. Fifth edition. London: H. K. Lewis. 1888.

THIS text-book, which, during eight years, has reached its fifth edition, commends itself to the student of medicine by its terse and clear style, its avoidance of unnecessary details, and, what is difficult in a compendium, its proper arrangement of symptoms so as to impress them upon the mind in their relative importance.

A MANUAL OF DISEASES OF THE NERVOUS SYSTEM. By W. R. GOWERS, M.D., F.R.C.P. American edition. With three hundred and forty-one illustrations. Pp. 1,357. Philadelphia: P. Blakiston, Son & Co.

THE American publishers have combined the two volumes of the English edition into one, making a somewhat formidable but perhaps more convenient book. The writings of Gowers are familiar to American readers through his smaller works on "Diagnosis," "Epilepsy," and "Ophthalmoscopy." The expectations raised by the excellence of his previous work will not be disappointed. Dr. Gowers has written one of the most complete and admirable text-books on nervous diseases. The book is copiously illustrated with cuts, showing pathological conditions and clinical cases. The descriptions of cerebral anatomy are fairly complete.

The portions especially instructive are those on epilepsy, on the anatomy and diseases of the cranial nerves, and most of the articles on diseases of the cord. The discussion of the muscular dystrophies is not so satisfactory, and it will be a disappointment to American readers to find practically nothing said about the neurasthenic states.

THERAPEUTICS: ITS PRINCIPLES AND PRACTICE. By H. C. WOOD, M.D. Seventh Edition. Pp. 908. Philadelphia: J. B. Lippincott Co. 1888.

THIS valuable work of therapeutics is so well known and appreciated by the profession that it needs no words of commendation from the reviewer, whose task, therefore, is only to point out wherein the seventh edition differs from its predecessors. The author in his preface states "that comparatively few persons have a full conception of the rapid progress of therapeutics and the amount of labor involved in keeping up with this forward movement. Scarcely three years have elapsed since the appearance of the sixth edition, yet the preparation of the present volume has necessitated a careful study by its author of nearly six hundred memoirs." He also calls attention to the special growth in the medical profession of the appreciation of the value of remedial measures rather than drugs, and he discusses these in Part I. of his book, in which he considers massage, metallo-therapy, feeding of the sick; treatment of general bodily conditions—such as exhaustion, obesity, and the gouty diathesis; heat and cold, and electricity. One turns also with interest to the consideration of the many new drugs concerning which, in the last three years, so many conflicting or corroborating accounts have been written, to find what has really crystallized with reference to them and their application.

Notwithstanding the author's efforts at condensation, this edition contains nearly two hundred pages more than former editions.

PRACTICAL ANATOMY: A MANUAL OF DISSECTIONS. By CHRISTOPHER HEATH, F.R.C.S. Philadelphia: P. Blakiston, Son & Co. 1888.

THIS is the seventh edition of this well-known text-book. It has been carefully revised by Mr. Rickman Godlee, new wood cuts added, and the sections in the thorax and the brain have been enlarged. The plates are very clear and fine; their utility would, however, have been greatly enhanced if, instead of numbers referring to a list of the names of the different objects depicted, these names had been printed on the plate, so that the student at a glance could see what he is looking for. This method of labelling the parts used in "Gray's Anatomy" has, doubtless, been one of the chief reasons of its great and continued popularity.

A TEXT-BOOK OF PHYSIOLOGY. Part I. By M. FOSTER, M.A., M.D., LL.D., F.R.S. Fifth edition. London and New York: Macmillan & Co. 1888.

PART I. of Foster's "Physiology" relates to blood, the tissues of movement, and the vascular mechanism. It has the familiar look of the former editions. It has the same involved style, which would have killed an ordinary text-book. The author has seen the necessity of adding and increasing the histological information. It is in this direction that the main difference between this and preceding editions is found. It is to be regretted that illustrations have not been introduced, as a good plate serves to impress upon the mind a clearer idea than pages of descriptions of minute anatomical details.

INEBRIETY: ITS CAUSE; ITS RESULTS; ITS REMEDY. By FRANKLIN D. CANN, M.D. Philadelphia: J. B. Lippincott Co. 1888.

IN treating of the causes and results of inebriety the author writes in the serious and popular style of the ordinary temperance lecturer, who talks of "jingling glasses" and "glittering saloons." The professional reader will turn first to that portion of the book which deals with treatment and management of inebriety, but he will not be startled by any new ideas; he will rather find it useful in reminding him of what he has seen or read before.

PHYSICIAN'S INTERPRETER. In Four Languages. Specially arranged for Diagnosis. By M. VON V. Philadelphia: F. A. Davis. 1888.

THIS is a collection of sentences designed to facilitate intercourse between a physician and his patient when neither understands the language of the other. The sentences are well chosen, and the book will be useful to one who is studying either German, French, or Italian, and who desires to familiarize himself with the medical terms in these languages. But one who is wholly ignorant of the language of his patient will have difficulty in making himself understood without some knowledge of the pronunciation, and, even if he does succeed in this, will be unable to gather much information from the answers of the patient. Many blank pages are inserted upon which the student may jot down any new sentences that he may be able to pick up from any source. The book is of a convenient size to be carried in the pocket.

ALPINE WINTER IN ITS MEDICAL ASPECTS. By A. TUCKER WISE, M.D., L.R.C.P., etc. Fourth Edition. London: J. & A. Churchill. 1888.

THE treatment of chest diseases in the mountains has become one of the recognized resources of therapeutics. The practice itself is founded upon a solid basis of fact, but the detailed information necessary to the proper selection of localities in the mountains adapted to the varying exigencies of chest-troubles has not always been forth coming. This want has been met in the present publication, which gives the important facts bearing on Davos, Platz, Wiesen, St. Moritz, and the Maloza, as health resorts.

BEITRÄGE ZUR PATHOLOGISCHEN ANATOMIE UND PHYSIOLOGIE. Herausgegeben von DR. ERNST ZIEGLER und DR. C. NAUWERCK. Zweiter Band, Drittes Heft; Dritter Band, Erstes Heft. Jena: Verlag von Gustav Fischer. 1888.

WE take pleasure in calling attention to this series of original contributions to pathology, which in the volumes before us are both numerous and valuable.

TEXT BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By JOHN J. REESE, M.D., Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania, etc. Second edition. 12mo, pp. 638. Philadelphia: P. Blakiston, Son & Co. 1889.

THE second edition of this standard work has been revised and comes to us with some important additions, in the subjects of Suffocation, Malpractice, Blood Stains, Ptomaïnes, and General Toxicology. It may now be looked upon as a complete manual of its kind, and well calculated for profitable reference by the general practitioner.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON THEORY AND PRACTICE OF MEDICINE.

Stated Meeting, February 19, 1889.

R. C. M. PAGE, M.D., CHAIRMAN.

DR. A. L. STERN exhibited

WEIGERT'S HOT-AIR INHALATION APPARATUS, FOR THE TREATMENT OF PULMONARY TUBERCULOSIS.

This consists of two cylinders of copper, one within the other, and the air to be inhaled, which is heated to a minimum temperature of 212° F. by means of a Bunsen burner, and thus rendered perfectly aseptic, passes up between the two. The inhalation is to be used for four hours each day, two hours at a time, and it can be taken either in a sitting or reclining posture. It is advised, however, that when first commencing the treatment the patient should use the apparatus for only thirty minutes, twice a day. The temperature of the air inhaled is gradually increased from 212° F. to as high a point as the patient can bear without suffering inconvenience, 482° F. being the highest temperature as yet reached in any case in these inhalations. Dr. Weigert, the inventor of the apparatus, is a graduate of the College of Physicians and Surgeons of New York, but is now residing in Berlin.

As a result of the hot-air inhalation, Dr. Stern said, there is an acceleration of the pulse, while there is a diminution in the frequency of the inspirations, and the inspirations become deeper. There is at first an elevation of the temperature, the rise being from one to two degrees; but after about an hour the temperature again subsides. The difficulty of breathing incident to consumption is soon markedly relieved, and there is at first a lessening and then a total cessation of cough. Under the use of the inhalations there is at first an increase, then a decrease, and, finally, total disappearance of expectoration. All catarrhal symptoms disappear, and also the fever and night-sweats. There is a clearing up of the infiltrated portions of the lungs, and cicatrization of cavities, where these exist, is brought about; while the strength, weight, and appetite of the patient gradually increase. The microscopic examination of the sputa generally shows at first an increase in the number of tubercle bacilli, but afterward there is a total disappearance of the bacilli, and a complete cure of the case is effected. The shortest period in which total disappearance of the bacilli has been noted is four months. This method of treatment, he said, in conclusion, has now been employed in one hundred and fifty cases, fifty of which are published in Vienna, and the Chairman stated that it has been successfully practised in this country by Dr. Trudeau, of Saranac Lake, N. Y.

DR. S. SEABURY JONES read a paper on

SIMPLE, NON-TUBERCULAR, NON-METASTATIC ABSCESS OF THE LUNGS.

This was a subject, he said, which had received but little attention. Simple abscess of the lungs was, however, comparatively rare, and it would doubtless occur more often than it does were it not, as Stokes had pointed out, that the lungs are provided with such an admirable natural system of drainage through the bronchial tubes. Practically speaking, it was liable to be met with in one of four forms. The first was that in which the symptoms were very obscure from the beginning and remained so until there suddenly occurred a discharge of purulent matter. In the second form the symptoms resembled those of pleurisy with effusion, and in the third those of pulmonary tuberculosis. The fourth form was that associated with the variety of pneumonia which advances slowly from one lobule to another, or is characterized by a tendency to skip from one lung to the other.

Dr. Jones said that he had personally met with all the forms except the first, but undoubted cases of this kind, occurring in the experience of others, were on record. Abscess of the lungs, he went on to say, was always accompanied with a depreciation of the general health, and alcoholism was apparently a prominent factor in its production. It was an affection confined to no particular age, and in 1887 Dr. L. Emmet Holt, of this city, had reported in THE MEDICAL RECORD a case that occurred in an infant only three months old. When he encountered his first case, now nine years ago, he was unable to find any reference to the subject, whatever, in any of the text-books. This case he then proceeded to narrate. The patient was a young man, seventeen years of age, of rather delicate general health and affected with slight lateral curvature of the spine, and he first came under observation, September 25, 1879. He was in his usual health, when he was attacked with severe pain in the left side, accompanied with cough, but no expectoration. At the time he was seen the pulse was 120 and the temperature 102° F. Anteriorly there were no abnormal physical signs, but posteriorly, in the subclavicular region on the left side, there was complete dulness on percussion, although no râles whatever could be found. There was still no expectoration. About October 1st a large abscess of the tonsil developed, from which pus discharged freely; and subsequently there was a discharge of purulent matter from the lungs through the mouth. After this the patient made a rapid recovery, and had no further trouble afterward.

He was led to consider this as a case of simple abscess of the lungs, first, on account of the short time intervening between the first symptoms and the discharge of pus; secondly, on account of the occurrence of the tonsillar abscess showing a tendency to the formation of abscesses in the system; thirdly, from the rapidity of the recovery; and, fourthly, because of the dulness found on physical exploration being exclusively posterior. He was afterward confirmed in his opinion in regard to the nature of the case by the report of a case published by Dr. Henry Payne in *The Lancet*, in 1882.

The patient was a male, twenty-three years of age, who was admitted to the Ashton-under-Lyne Infirmary in June, 1881, with well-marked signs of pleuritic effusion on the left side; the trouble having commenced in the previous February with chills, pain in the side, and feverishness, the result of getting wet through. He was treated for pleurisy at this time, and recovered sufficiently to attend to his work until April, when he experienced difficulty in breathing, shortness of breath, and slight cough. He spat blood once or twice, and continued to grow worse until his admission to the hospital in June. He was treated, without improvement, until August 20th, when the following condition was noted: The patient has lost flesh since admission. The left side bulges more than the right and measures an inch more round; movements on this side are deficient; there is absolute dulness on percussion, both back and front; no breath-sounds are heard, and the vocal fremitus and resonance are absent. The breathing on the right side is exaggerated. He has a slight cough, but no expectoration of any importance. Has night-sweats; the temperature every evening has been above 100° F., and the pulse invariably above 100.

From these symptoms an empyema was suspected, and an exploratory puncture discovered pus. Accordingly, upon August 23d, an incision about two inches long was made just above and parallel to the seventh rib in the anterior axillary line, antiseptically and under chloroform. Upon opening the pleura there was very profuse hemorrhage of dark venous blood, which could only be arrested by the injection of bichloride of iron solution. About fifteen ounces of pus escaped, and a drainage-tube was inserted. There was a very profuse discharge, which in a few days became fetid. He continued to do fairly well until the 29th, when the temperature suddenly rose to

104° F.; and, after suffering some pain in the chest, he died on the 30th. The autopsy showed the whole of both surfaces of the left pleura adherent, without a drop of fluid in the sac. The external opening made in the chest-wall led into a large irregular cavity, situated in the centre of the lung, which was in a state of gray hepatization. Dr. Payne regarded it as undoubtedly a case of pneumonia, ending in the formation of an abscess.

Dr. Jones' second case was observed in 1886. The patient was a male, forty years of age, who was attacked with tonsillitis. There was suppuration, accompanied with pus, which was ushered in by a chill, and on an incision being made in the tonsil there was a considerable discharge of pus. Subsequently he had another severe rigor, followed by high temperature, and coughed up a cupful of pus and dark blood. Still later there was another attack of a similar character. In this case there was an area of dulness at the base of the right lung, with local tenderness on pressure. The matter coughed up was found, on microscopical examination, to contain the pneumococcus of Friedländer.

This third case was one in which the symptoms resembled those of tuberculosis. The patient was first troubled with palpitation of the heart, which he believed to be due to gastric derangement. There was a considerable loss of flesh (amounting to forty pounds), and the temperature ranged from 100° to 102° F. Physical examination revealed an area of dulness in the right subclavicular region. Dr. Jones prescribed quinine and a general tonic treatment, and sent him to the country for the summer. In July he coughed up a considerable quantity of pus and dark-colored blood. Afterward the expectoration was profuse, and he suffered from night-sweats and became greatly emaciated. He then began to improve, and, as repeated examinations of the sputa failed to detect at any time the presence of the bacillus tuberculosis, the case was regarded as one of simple abscess of the lungs, and a favorable prognosis made. In a few weeks the patient regained his usual health and weight, although a small cavity still remained in the lung. Two years afterward he was seen in excellent health, and no sign of a cavity could be detected.

He next narrated a case reported in *The Lancet* in 1884 by Mr. T. Pridgin Teale. The patient was a male, fifty-four years of age; had been ill for three months, and the earlier history of the case was very obscure, commencing with a cold shivering, loss of flesh, vomiting and retching, and pain in the hepatic region, but without cough or any symptom of lung disease. About two weeks before he was seen by Mr. Teale, Dr. Clifford Albutt found the hepatic dulness increasing upward, as if there were fluid in the lower part of the thorax, and a week later Dr. Myrtle saw the patient, and, finding dulness occupying the lower half of the right lung, came to the conclusion that fluid was present and advised early tapping. The right side of the thorax was accordingly punctured low down with the small trocar of Bartlett's aspirator; but only two drachms of fluid—clear and straw-colored—could be obtained with the suction of the aspirator. Being still confident that fluid was present, Mr. Teale made a fresh puncture higher up, when very offensive, thin, greenish pus appeared, and after careful and continuous aspiration about a pint of pus was slowly withdrawn. In consequence of the unexpected character of the case, two days later a consultation was held, and it was decided that, as soon as the temporary relief afforded by the tapping had passed by, the thorax should be opened and drained. By a fortnight afterward the patient had become more hectic, had expectorated for two days most offensive pus, and was altogether extremely ill. On the right side there was continuous dulness, extending upward in front to about the level of the fifth rib, a little below the nipple, and laterally around the axilla, and diminishing toward the spine. In the recumbent posture there was a spot in the front of the chest having a peculiar "cracked-pot" resonance in the middle of a dull area. No râles. An incision was made at the cite of the puncture and the pleural cavity opened. No pus appeared; only a small quantity of serum. The lung felt dense and boggy; not crepitant and elastic. On reintroducing the trocar and puncturing the lung, pus appeared. The puncture was enlarged so as to admit the finger, and two pints of exceedingly fetid pus escaped. A drainage-tube was inserted, and the cavity syringed out with a weak solution of carbolic acid. The after-progress of the case was extremely tedious and critical, but the patient finally made a good recovery.

Trousseau stated that for his first twenty five years of hospital practice he had never met with a case of simple abscess. Afterward he found two cases. Laennec met with only five cases in several hundred autopsies in those who had died of pneumonia. "Moreover," he wrote, "they were inconsiderable, few in number, and scattered through the lungs, which presented the third degree of inflammation." In 1848, Robert Graves reported six cases.

Simple abscess of the lung was no doubt more frequent, however, than was generally supposed, and in the future it would be more easy to recognize than formerly, since Koch's brilliant discovery of the bacillus tuberculosis now enabled us to make a differential diagnosis. In Pepper's "System of Medicine" some attention was given to the affection, and it was defined as a circumscribed suppuration of the lung, resulting in a cavity. In Von Ziemssen it was referred to only as a sequel of croupous pneumonia. In 1885 Dr. Andrew Dunlop described an interesting case in *The Lancet* in a man, fifty-three years of age, of intemperate habits. Dulness on percussion, with weak breathing, was observed below the right nipple. This gradually extended upward until, in about a week, there was dulness, with almost inaudible respiration, up to the second rib. Posteriorly there was dulness about two inches upward from the base, with weak, rough respiration. Shortly afterward a prominence of considerable extent was noticed in the mammary region. This tumor seemed to originate beneath the ribs, which were bulged outward by it, and it was hard to the touch. The tumor was aspirated, and about ten ounces of pus withdrawn, which was followed by some subsidence of the tumor. At the end of a month the upper part of the tumor was less prominent, while at least the upper half of it was tympanitic on percussion. During this time the patient had been spitting up an ounce or two of curdy pus daily, and during the last ten days it had also been escaping from the puncture made by the aspirator-needle to the extent of one or two ounces in the twenty-four hours. He gradually failed, and died about two months and a half later.

Lassen, of Kiel, had reported 6 cases. Runeberg, of Sweden, had collected 8, including 1 of his own, and including the 3 cases narrated in the present paper. There were now on record 30 well-authenticated cases, exclusive of Graves' 6 cases, all of which recovered. Of the 30, 16 were operated on, and 14 were not operated on. Of the former, 4 died, and of the latter, 2. The main point, where an abscess had manifested itself, was to decide between tubercular and simple abscess. The rapidity of the development of the symptoms was always in favor of simple abscess, but the real test was to be found in the microscope. If, in any case, an operation was decided upon, free incision was no doubt the best procedure. Dr. Jones said he had not been favorably impressed with the results attained from the injection of tuberculous cavities. He would only operate, however, when an operation was clearly indicated.

DISCUSSION.

The Chairman, DR. PAGE, said the paper was quite a revelation to him. He had personally never met with a case of pneumonia terminating in abscess, and Wilson Fox and other authorities had stated that abscess of the lungs was very rare. Nothing had been said in the paper in regard to pulmonary abscess resulting from the presence of foreign bodies. He had seen a case in which an abscess

developed on account of the presence of a bullet which had entered the lung-tissue twenty years before, the patient having been wounded in one of the battles during the late war. He was thought to have a cavity, and was troubled with cough and hemorrhage. The case resulted fatally, and at the autopsy an abscess with the bullet in it was found. Reynolds related a similar case in an old Waterloo soldier, where the bullet remained in the lung for forty years before the abscess developed.

Dr. Alfred L. Loomis said that the paper, with its three original cases and its records of other cases, constituted a valuable contribution to the somewhat meagre literature of this subject. In his own experience, simple abscess of the lung was very rare. He had, however, seen a very few cases which were regarded, and very properly, he thought, of this nature, and in one or two instances the diagnosis was proved by post-mortem examination. In all cases, so far as his knowledge went, where abscess had been observed, it had been preceded by the signs of inflammation, more or less active, and it occurred in those in a condition favoring the development of abscess. He believed that such abscesses formed in lungs which were previously the seat of fibrinous pneumonia followed by an increase of connective tissue. When subjected to a chronic inflammation, not very active, abscesses were liable to form in this tissue. Such abscesses also occurred altogether in alcoholic subjects, and he had never seen them in any other. There was one point which Dr. Jones had touched upon that he wished to call attention to. It was, in his opinion, very difficult to draw the line between circumscribed empyema in certain positions and abscess of the lung, and especially if such empyema broke into the bronchial tubes so as to allow of the escape of pus. He thought that he may have made such a mistake himself. In any case of his own he should be very loath to pass a knife into the lung-tissue, and he fancied that the necessity for such a procedure was very rare. As a rule, it diminished the chances of the patient's recovery, and it was better to leave the abscess to open spontaneously. We were certainly indebted to Dr. Jones for directing attention to this subject, and urging greater care in the matter of diagnosis.

In closing the discussion Dr. Jones said that in two of his cases he had the opportunity to examine the sputa, and as there was in both instances an entire absence of the tubercle bacillus, it was on this that he based his opinion of this non-tuberculous character.

Dr. Frederick Peterson read a paper on

ANODAL DIFFUSION.

He said a more exact title for his paper would be "Electric Cataphoresis as a Therapeutic Measure." He spoke first of the remarkable series of experiments in voltaic narcotism for the production of local anæsthesia by Dr. Benjamin W. Richardson, as recorded in several papers published in the *Medical Times and Gazette* in the year 1859. The fluid which he used was composed of equal parts of tincture of aconite and chloroform. He had unfortunately abandoned the investigation of the matter soon after this, and it slumbered for more than twenty-five years. In 1886 Wagner published the excellent results which he had obtained in producing local anæsthesia by moistening the anode with a solution of cocaine, and the matter was then taken up by a number of observers. Among these was Dr. J. Leonard Corning, of this city, who published an article on the subject in the *New York Medical Journal* in November, 1886. For introducing the cocaine he employed an instrument resembling that of Baumscheitt, but provided with many more fine needles. Dr. Corning, however, did not publish any results in cases. Dr. Peterson exhibited the instrument devised by Adamkiwicz, which he criticised as unphilosophical in construction, and later presented an apparatus which he had devised himself, and which he said had proved very satisfactory in his hands. He had made over one hundred careful experiments, and about one-quarter of these he briefly related. The medicinal agents which he had principally employed were cocaine and aconitia, and he had found the method very successful in a number of neuralgic and other painful affections. There could be no doubt, he thought, that cataphoresis was produced by this means.

DISCUSSION.

Dr. Landon Carter Gray said that there was not much to be said, after Dr. Peterson's exhaustive paper. It was a new subject. He had got one of Adamkiwicz's instruments soon after they came out, and had obtained some results with it, but they were unfortunate results. He found its application quite painful, and in one case, where the patient was just recovering from an attack of acute articular rheumatism, he feared that he had induced a second attack by the use of the instrument. Because of the painfulness of the carbon-disk he had given it up, and since then, whenever he had occasion to resort to this method, he employed an ordinary sponge-electrode.

Dr. M. Allen Starr said the paper deserved the consideration of the profession, from the care used in the experiments recorded in it. Personally he considered this a very valuable method in the treatment of pain. In one of the cases cited by Dr. Peterson, where the patient was affected with locomotor ataxia, he had been a witness of the relief afforded. There was, however, one objection which he thought might be urged against this means of treatment, and that was the uncertainty in the matter of dosage. It seemed to him that it would be possible, however, by a series of experiments, to arrive at some definite knowledge in regard to this point. On one occasion he desired to use aconitia by this method, but he hesitated because he feared that a dangerous amount of the drug might be introduced into the system.

There was one other point which had not been brought out in the paper, and that was the applicability of this method to diagnosis as well as to treatment. By the use of cocaine, for instance, it was possible, in a case of *tic convulsif*, to determine which branch of the trigeminal nerve was affected. The injection of cocaine was disagreeable, and might cause abscess, and this method was therefore preferable to the use of the hypodermic syringe. He thought the method might also be employed sometimes to determine whether the pain in a given case was of peripheral or hysterical origin. If it were peripheral it would be relieved by it.

Dr. B. Sachs said that he had imported an Adamkiwicz instrument, but after trying it for a time he had not felt much encouraged to continue its use. In cases not very severe ordinary electric treatment gave as much relief, and, as a rule, he found that other means are quite as efficient as this, such as the hypodermic injection of morphia, cocaine, or aconitia.

While he was impressed with the cases of Dr. Peterson, he thought the latter should have appended other tests on the same patients. Thus the same troubles that were treated by the method described should have been treated by the anode alone, and by the drug alone, pressed upon the skin for the same length of time. The method at best was only palliative, and not curative. He did not agree with Dr. Starr that it afforded a means of differential diagnosis between peripheral neuritis and hysterical pain, because hysterical pain was apt to give way at any moment.

Dr. W. R. Birdsall said that he had had no practical experience with the method, but from the literature of the subject he had formed the opinion that it was of but little value. It seemed doubtful to him whether a sufficient amount of the medicinal agent employed could be introduced into the skin to cause the results claimed, and he was inclined to attribute whatever benefit was received in the cases in which it was tried to the anode alone. The depth to which such substances could be introduced was said to be very slight; but in many cases all that was needed was simply to bring the remedy in contact with the absorbents of the skin. He was glad to learn, how-

ever, that Dr. Peterson had found the method of greater value than he had supposed it to be, though he thought many experiments were necessary to decide positively as to its utility. When the nerves affected were superficial he would suppose it to be of the greatest benefit. When asked if he had found it of service in sciatica, Dr. Peterson had replied that he had not, because the nerves were too deep.

Dr. C. L. Dana said that he had obtained no satisfactory results with the Adamkiwicz instrument. Some time since Dr. Squibb had reported some very interesting experiments in which decided results were produced by the local application of various substances in connection with oleic acid, and with a preparation of it containing one per cent. of aconitia he had caused constitutional effects. No constitutional effects, however, had thus far been produced by the method in question, and he could not but agree with Dr. Birdsall that it was very superficial in its action. With the use of Dr. Peterson's formula he had produced anæsthesia in only one out of three cases, though this might have been perhaps due to some defect in the technique employed.

Dr. J. Arthur Booth said that Dr. Peterson's method certainly produced marked anæsthesia both to feeling and touch. As mentioned in the paper, one of the experiments recorded was made on his person, and the anæsthesia lasted for at least fifteen minutes. For some time afterward the part experimented on remained very sore and hyperæmic. He had tried it himself in three cases, and in one it afforded decided relief.

In closing the discussion, Dr. Peterson said that he agreed with Dr. Starr that the uncertainty of the dosage was one of the great objections to the method, but it was probable that by a course of experimentation such as the latter had suggested this difficulty would in time be obviated. As to Dr. Sachs' criticism that no parallel tests had been reported in the paper, he would say that in some of the cases the anode was used alone, and that no effects were observed except just at the time of its application. As to Dr. Birdsall's remark that the method was superficial in its action, and that the use of strong currents was required against strong resistance, in one or two of his experiments an imperceptible current employed for a longer time produced the same effects. There was, as had been said, an absence of constitutional effects, and as many of the experiments had been made upon his own person he could speak with some degree of assurance on this point.

DIFFUSE PIGMENTATION PRODUCED BY THE INTERNAL USE OF ARSENIC.

Dr. W. M. Leszynsky exhibited a little girl, nine or ten years of age, in whom the use of Fowler's solution, given for the relief of chorea, had produced very marked pigmentation all over the surface of the body. There was no reason whatever to suspect the presence of Addison's disease, he said, and the case seemed to him a most remarkable one. As to the prognosis as regards the permanency of the pigmentation, he was unable to express any opinion.

An Unusual Accident Attending Tooth Extraction.—To the record of the numerous casualties which may follow tooth extraction Mr. Ackery, at the Odontological Society of Great Britain, has added another probably unique case. A molar was extracted from a patient while under the influence of nitrous oxide gas; the apex of one root, however, was left behind. A sinus subsequently appeared, and this did not heal upon the removal of the remaining portion of the tooth. Eight years after the original operation a substance was discharged from the sinus, which proved upon examination to be the point of one of the jaws of a tooth-forceps, which had doubtless been broken and left in the alveolar process at the time of the endeavor to extract the tooth.—*The Lancet*, February 9, 1889.

Correspondence.

OUR PARIS LETTER.

(From our Own Correspondent.)

THE NATURE OF TETANUS—TREATMENT OF CYSTIC TUMORS—ZOÖPLASTIC GRAFTINGS WITH THE SKIN OF THE FROG—MEDICINE IN ORIENTAL COUNTRIES—SYPHILIS AS AN INCURABLE DISEASE.

Paris, April 5, 1889.

The prolonged reading of the subject introduced by Professor Verneuil at the Academy of Medicine, on the nature of tetanus, has been brought to a close. Besides the equine and telluric origin of tetanus, M. Verneuil believes also in the contagiousness of this malady, which may be effected by the dust floating in the air, or even by flies, as in the case of charbon. He cited a case in support of this last conjecture, without pretending, however, to arrive at a positive conclusion. In fact, M. Verneuil gives the preference to the equine origin of tetanus. In support of his thesis, he cites a statistic of about 380 cases. Of this number, 222 relate to individuals whose profession put them in constant relation with the horse (farmers, coachmen, stablemen, etc.), or fifty-eight per cent. As for the other cases, the equine origin of the malady, which may not appear so evident, is none the less real. For instance, three medical men, who died from tetanus, had horses which they looked after themselves, and a beadle, whose profession has nothing in common with that of the stableman, contracted the disease after having during a whole day, with a wound in the hand, transported manure from one place to another. As regards the telluric origin of tetanus, M. Verneuil sees in the earth only an intermediate agent between the horse and man. The soil impregnated with the dejections of the horse would be noxious; ordinary soil would not be so. Thus it was that, in the extensive works executed at the port of Boulogne, and where not a single horse was employed, not one case of tetanus was observed, although the wounds incurred by the workmen were numerous. Professor Verneuil concluded his communication by insisting on the means that should be taken to prevent the development of this malady. As it is now admitted to be contagious and microbian, all the articles that have been in contact with tetanic patients should be completely disinfected. A person wounded should never sleep in the bed previously occupied by a tetanic patient, without disinfection having been absolutely carried out. The equine origin of the malady being also established, the prophylactic measures should not be confined to man, but they should be applied also to horses. He recommends that the most energetic means should be employed, and he proposes not only the disinfection, but also the destruction of objects which, like the harness for instance, that had been used on tetanic horses, might contain the microbe of tetanus.

Dr. Barth, physician to the Broussais Hospital, has published a note on a new method of treatment applicable to synovial cysts, sebaceous wens and, in general, to all cystic tumors of the skin and of superficial regions. The beneficial results he had obtained by the interstitial injections of arsenic in the treatment of malignant lymphoma have induced him to try the same treatment in the above cases. Starting on the principle that arsenical injections determine a moderate inflammation of the tissues, which does not go on to suppuration when certain very simple precautions are taken, and which is often followed by an atrophic process, the author considered this remedy a convenient means of treating certain tumors which are benign in their nature, but are inconvenient, for which one often hesitates to advise a surgical operation. The first case in which Dr. Barth had occasion to try the procedure was that of a young girl twelve years of age, who was affected with a cynovial cyst of the wrist of several

months duration. This cyst, about the size of a small walnut, produced a very visible deformity. Moreover, it was extremely inconvenient for certain movements, the playing on the piano for example. Painting the part over with the tincture of iodine, frictions with divers resolvent ointments, prolonged compression, had been employed, but without any success. The author himself commenced by trying crushing of the tumor, but without effect, owing to the hardness of its parietes. He then resorted to an injection of two drops of pure Fowler's solution into the cavity of the cyst. The operation produced a sharp pain, and was followed the next day by swelling with tension of the sac; but this soon commenced to diminish in size, and ten days after the tumor had entirely disappeared without leaving the slightest trace of its existence. The author had occasion to employ this treatment in other cases of cystic or benign tumors, and with equal success.

Till now grafting on wounds has been practised with human skin, or with that of the common fowl. Dr. Dubousquet-Laborderie has tried zoöplastic graftings with the skin of the frog, and has obtained excellent results. For the success of the grafting he recommends the following rules: 1. The wound should be granulating, but the granulations should not be exuberant. 2. The operator must avoid causing bleeding and suppuration. 3. The patient should remain immobile for the first two or three days. 4. The dressings, which should be rigorously antiseptic, should be applied by the medical attendant himself. The first dressing should be compressive.

At a recent meeting of the Academy of Medicine, Dr. Le Roy de Méricourt read a report on the "Influence of Western Medicine in the Extreme East." Protestants, he said, have perfectly understood the importance which medical men acquire in oriental countries. They have established in China veritable medical missions, where medicine is taught to the Chinese, who will soon become practitioners and confirm the renown of Anglo-German science. He observes with some regret that nothing analogous has been done by the Latin peoples. M. Radiguet, former consular agent in China, had drawn the attention of the Academy to this sad state of things. Dr. Le Roy de Méricourt associates with this gentleman to ask the Academy to encourage the foundation in China of French missions, where medicine and surgery will be practised and taught.

Apropos of the correspondence being published in the English medical press, on the declaration recently made by Dr. Gowers to the effect that syphilis is incurable, I may here cite the following note, published in the *Gazette Hebdomadaire*, on the re-infection of syphilis, which may have some bearing on the subject: "Ricord says that an individual once in possession of syphilis is never free from it. Barensprung is of an analogous opinion, but he adds that, in syphilis, things take place as in the acute exanthematous affections, that the patient acquires a relative immunity in this respect. Sigmund absolutely denies re-infection; Zeissl, on the contrary, pretends to have observed it several times, some years after a first attack. Dr. Neumann cited several striking examples of re-infection."

The editor of a medical journal writing on the properties of saccharin, facetiously remarks that superior councils differ in opinion, according to the latitudes that they are in, on the merits of this valuable substance. The Council of Health of the Austro-Hungarian Empire, has declared that the employment of saccharin in the manufacture of alimentary products is not injurious, that saccharin is not toxic, and that it is even a precious substance, provided it is well prepared.

Food Adulteration in Paris.—The director of the laboratory of the police department in Paris has been detected accepting bribes from tradesmen accused of adulterating their goods, even having established a system of blackmail based on threats of exposing adulteration.

LETTER FROM THE SANDWICH ISLANDS—CAUSES OF THE DEPOPULATION OF THESE ISLANDS—THE DEMOGRAPHIC EFFECTS OF INTRODUCED DISEASES—SYPHILIS, LEPROSY—DR. BARKER'S DIPLOMA.

To the Editor of The Medical Record.

Sir: I send you a few hastily written notes of my observation of matters medical in the Sandwich Islands, which I trust may prove of interest to your readers.

From a sociological as well as from a strictly medical stand-point the Sandwich Islands present many features of interest to the observer. Situated in the midst of the ocean, continually swept by balmy breezes, with a tropical luxuriance of vegetation, these islands have been termed the "Paradise of the Pacific." They are inhabited by a race *facile princeps* among the Polynesian races in points of physical development, intelligence, and modes of living, with a delightful climate, a productive soil, sustaining no hardships, and yet dying at a most rapid rate. At the time of Captain Cook's visit, a little over a century ago, the population was estimated at not less than four hundred thousand, but the contact of civilization has acted like a blight upon the Hawaiian people; under its withering influence the native population has dwindled down by tens of thousands each decade until to-day it does not exceed thirty-five thousand.

It would be interesting to trace the causes which have led to the depopulation of these islands. No unfavorable influence of soil, climate, or hardship can be invoked in explanation of the decay and death of the native race. It is not the outcome of a contest between a savage and a civilized race in which the weaker succumbs to the stronger, as in the case of the North American Indian. Nor does it seem to be an example of the "survival of the fittest," since there is no competitive struggle for subsistence in a land where nature is so kindly and bountiful and furnishes an abundance of easily procured food, more than sufficient for the needs of all. Under the same conditions which have led to the depletion of the Hawaiian race and which seem to threaten its ultimate extinction, the foreign races that have settled here have taken root and flourished, and now virtually "occupy the land."

In endeavoring to appreciate the influences which have operated as factors in this extraordinary depletion of the population, the physiological peculiarities of the native should perhaps be considered among the contributing causes. The Hawaiian presents a curious combination of strength and weakness, or, rather, of seeming vigor masking actual effeminacy. He has a fine frame, well nourished—the embodiment, to all appearances, of bodily vigor—and yet his physical fibre is essentially weak and he is endowed with but a feeble vital tenacity. He succumbs to the shock of hardships or trivial ailments which would not seriously affect a white man. When he becomes sick he is not buoyed up with a desire and determination to live—he simply surrenders to fate and lies down to die. He takes life gayly and luxuriates in its enjoyment. He accepts death with the same cheerful alacrity. In fact, he dies often from no apparent cause other than an apathetic indifference to life.

Many curious cases might be cited illustrating the extraordinary influence of the mind over the body and proving that psychology may be a powerful agency of death as well as a means of cure. The kahuna or "medicine man" is invested by traditional superstition with supernatural powers which entirely overshadow those attributed to his civilized congener "the faith-cure man." He holds in his hands the issues not only of life but of death, and does things undreamed of in the "Christian science" philosophy. When a native is ill he is persuaded that his sickness is due to the agency of some demon or that he is being "prayed to death" by a kahuna employed by his enemy. Unless he can secure the interposition of a more powerful kahuna to break the spell he gives up hope and the ghost soon afterward, and

dies, often with no evidences of physical disease which the most expert diagnostician can discover.

The demographic effects of introduced diseases in a virgin soil can nowhere better be studied, and they exhibit facts of the most remarkable interest. The natives have proven strangely susceptible to the diseases of civilized life, and trifling ailments such as measles, whooping-cough, etc., acquire by their transplantation into this soil all the virulence of a fatal pestilence. Measles and whooping-cough, introduced in 1849, almost decimated the population—the mortality was excessive, almost every case terminating fatally. The ravages of small-pox, introduced in 1853, were none the less frightful. In the island of Oahu over fifteen thousand died, and the Marshal of the islands informed me that he superintended the burial of ten thousand victims of this disease in Honolulu alone—more than one-half of its entire population. The rapid spread and the excessive mortality of these diseases were attributed to the intimate social relations of the natives, their disregard of precautions, and their free use of cold water upon the first accession of febrile symptoms. It is one of the characteristics of the Hawaiian that the most disgusting disease excites no sentiment of repulsion or suggests the separation or isolation of the sick.

The most important agency in the depopulation of the islands has been attributed to syphilis, which was introduced by Captain Cook and his men in 1778. The licentious habits and promiscuous intercourse of the inhabitants caused it to spread like wildfire through the islands. In explanation of this rapid and universal diffusion of a disease strictly venereal, the "free and easy" and ultra-communistic customs of the social life of that period may be cited. A round of visiting was the chief diversion of the native, and the laws of Hawaiian hospitality required that the host should not only furnish his guest with food and lodging, but provide for his entertainment the women of his family. This was the universal custom, the neglect of which was regarded as a most unpardonable breach of etiquette. It is said that one of the severest trials of the early missionaries in their tours through the islands, scattering the seeds of Christianity, was the constant obtrusion of this St. Anthony form of temptation.

In a recent paper read before the "Honolulu Social Science Association," November, 1888, the Rev. S. E. Bishop thus comments upon this point: "It may be said in general that chastity had absolutely no recognition. It was simply a thing unknown and unthought of as a virtue in the old domestic life of Hawaii. A woman who withheld herself was counted sour and ungracious. This did not exclude more or less of marital proprietorship involving an invasion of the husband's right in enjoying his property without his consent. There was no impurity in it, any more than among brute animals. There was, however, a salutary limitation of some importance in a frequent stringent guarding of early virginity. Young maidens were quite commonly put under taboo for first use by the chief, after possession by whom all restriction ceased. No sense of a sacredness in chastity seems to have been involved in this, nor any sense of profanation in the contrary. It was only the thought of a special choiceness in an article that was fresh and unused. In the tremendous disturbances of life ensuing upon the advent of the white man, even this solitary restriction perished."

The effects of syphilis upon a race hitherto free from sexual diseases were simply murderous—multitudes perished, and those who escaped death were left with shattered frames and enfeebled constitutions which made them an easy prey to maladies of a trifling character. In addition to the original "stocking" of the island with syphilis by Captain Cook, a fresh increment of infectious material was from time to time added by the hordes of reckless sailors from the whaling vessels which were accustomed to visit the islands for recruiting purposes. No other race in the world, perhaps, has been so completely saturated with syphilis as the Hawaiian, and the syphilographer has here the opportunity of studying the strange mutation which the syphilitic virus undergoes in its transplantation to a virgin soil, and by which it acquires an added virulence and a greater potentiality for mischief.

He has also here an admirable field for studying the effects of hereditary immunity, which has resulted in the production of a much milder form of the disease in the course of three or four generations. At the present day syphilis in the Sandwich Islands is comparatively a benign disease, and furnishes but a small contingent to the sum of mortality. Almost all of the cases that came under my observation at the Queen's Hospital, in the Honolulu Dispensary, and elsewhere, were of the mildest type, the lesions being superficial and comparatively insignificant. Not only has the disease moderated in severity, but, according to the testimony of numerous physicians with whom I conversed, it has materially decreased in frequency.

Especially was I struck with the absence of notable evidences of hereditary syphilis among the younger population. Although I was constantly on the lookout for indications of hereditary taint, nowhere did I observe the characteristic impress of inherited disease, except among the lepers at Molokai. The comparative rarity of hereditary transmission may be explained by the fact that the Hawaiians of to-day are a sterile race. In some of the districts the percentage of births does not exceed 2 per 1,000, instead of 28 per 1,000 as it should be to balance the mortality rate. This is in striking contrast with the prolificness which distinguished the Hawaiian families in the olden times. What measure of influence syphilis has exerted in sapping the procreative powers of the people cannot be definitely determined. It is a singular fact that the loss of procreative capacity seems to be limited to the male, and is attributed to early indulgence in sexual excesses. Native women united to foreigners commonly bring forth a numerous progeny.

The fact that so few living children are born to Hawaiian families is probably due not so much to the impotence of the male as to the common practice of abortion. Before the advent of Christianity infanticide was the bane of the race. In the olden times the parents were considered the arbiters of the lives of their offspring, and the practice of strangling or burying alive their infants carried with it no conception of criminality. Thanks to the efforts of the missionaries, they have abandoned this practice, and now they resort to methods more in accordance with civilized customs. Instead of granting the product of conception a reprieve of nine months, they hasten its execution. One of the first lessons a Hawaiian girl learns on arriving at puberty is the expulsion of the fœtus. An interesting chapter might be written upon the various methods and agencies employed for this purpose; some of them are quite unique, and show the inventive genius of the native—such as stuffing the vagina with leaves or foreign substances of an extremely irritant nature. One of the most effective and commonly employed is drinking a decoction made from the roots of the pandanus-tree.

In this connection it may be said that, barring venereal diseases, the Hawaiian women are singularly free from the vast complexity and variety of uterine troubles with which their more civilized sisters are afflicted. As I learned from Dr. Trousseau, to whose extensive knowledge and experience of the Hawaiian people I am indebted for many facts of interest, native women seldom suffer from uterine displacements, lacerations, leucorrhœa, etc. This is somewhat surprising, in view of the fact that active horseback exercise is almost universally indulged in, the women always riding astraddle, man-fashion.

The process of parturition is attended with little suffering, and is usually of short duration. The presence of a doctor is rarely required, and then only in the presence of some grave complication. Women are confined usually in a sitting posture, the perineum resting upon a low, somewhat conical support. If the labor is not promptly accomplished the process is expedited by a native woman,

who kneels or sits behind the sufferer, and, encircling her arms around the abdomen, gives material assistance by more or less judicious pressure. The after-birth is expelled in the same manner, which rivals the Credé method of expression in ease and certainty. The woman usually gets about the same day, her first act being to wash the clothing soiled by her confinement; the accomplishment of this duty is, to the native mind, invested with something of the sacredness of superstition.

Honolulu boasts of a number of charitable institutions. The Queen's Hospital has one hundred and twenty beds, and is most admirably arranged and well kept. Its beautiful situation, cool corridors, and clean wards give it a most inviting aspect. A tax of two dollars per capita is levied upon everyone who visits the islands for its support. It is free to Hawaiians. White foreigners pay from fifty cents to two dollars and fifty cents per day for accommodations. Through the courtesy of Dr. McKibbin, the surgeon-in-chief, I saw many cases of interest, both in the medical and surgical wards.

But the chief interest of these islands to the medical man centres in the leper settlement of Molokai. Nowhere else in the world can be found a parallel to the extraordinary development and rapid spread of this disease, which in the short space of little more than one generation has attained such alarming proportions, and proved such a terrible menace to the public health.

In closing this letter I may incidentally mention a matter which will be of interest to those acquainted with the attempt made, some five years ago, to smirch the fair professional fame and personal integrity of one of the most honored members of our profession.

It will be remembered that a charge was made before the Academy of Medicine, that Dr. Barker had made a false claim to a Paris diploma. At Dr. Barker's request, a committee was appointed to examine this charge. After a thorough investigation, the committee made a unanimous report, declaring the charge to be unfounded and vindicating Dr. Barker, and their report was unanimously adopted by the Academy. And now comes, in a most singular way, and from a most authentic source, additional evidence of the utter falsity of this charge.

Dr. George H. Trousseau, to whom I have alluded, is the son of the famous Trousseau, of Paris, and inherits many of the brilliant and admirable qualities of his distinguished father. In giving me some reminiscences of his former life in Paris, he mentioned having met Dr. Barker as a guest at a dinner given by his father in Paris, and distinctly recalled the fact of his father having mentioned on this occasion that the diploma of the Faculté de Médicine had been conferred upon Dr. Barker. He also declares that he not only *saw* the diploma, but that, at his father's request, he personally carried the document to Dr. Barker's hotel and left it there, to be delivered to him upon his return.

It was a matter of great regret to him that he had not heard of the charge against Dr. Barker until many months after it was brought before the Academy, and thus had not the opportunity to refute it, which he would gladly have done. This direct statement, coming unsolicited from such an undoubted source, although not necessary to Dr. Barker's reputation, will be pleasant to his numerous friends.

PRINCE A. MORROW, M.D.

HONOLULU, March 14, 1889.

THE INJURIOUS EFFECTS OF COCAINE.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Dr. Windle's experience with cocaine corresponds in many respects with my own, in a more prolonged use of it in my own person, for the relief of a severe pressing pain caused by an intra-nasal deformity, since entirely cured by a removal of a portion turbinated by Dr. F. H. Bosworth. It was used for a year or more, in the form of spray, at different intervals.

Insomnia and loss of appetite were always present as long as any of the drug was in the system, but soon became normal on its suspension. The most noticeable reaction was in the nose itself, always in the form of increased hyperæmia, the more marked the shorter the interval between times of using it; slight if two weeks elapsed, but severe if used for several days in succession, even to the utter occlusion of the nares, so that no air could be forced through them. This would pass away in twenty-four to forty-eight hours. But the worst effect is on the nervous system. I think it must be on account of the proximity to the brain, for I have injected it all over the body in scores of minor surgical operations, without ever noting the slightest untoward effect. I never experienced any of Dr. Windle's "delightful effects," though pain was always relieved for hours. On the contrary, a most extreme nervousness comes on, making one feel that he would do anything to forget himself. (I remember one day, when not very busy, of reading the whole German grammar through at one sitting.) The pupils become dilated, and the face assumes a changed, weird expression. This, too, subsides as soon as the drug is out of the system.

I am convinced that the prolonged use of cocaine in the nasal cavities is pernicious, tending to defeat the very objects for which it is often used.

A. A. ARMSTRONG, M.D.

FAIR HAVEN, N. J.

THE RELATIVE INFLUENCE OF THE PRIMARY AND INDUCED CURRENTS OVER MUSCULAR CONTRACTIONS IN PARALYSIS.

A REPLY TO DR. STARR'S CRITICISM.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In his criticism on my paper "On the Effects of Electricity in Peripheral Nerve Lesions," read before the Academy of Medicine, March 21st, and published in your issue of April 6th, Dr. Starr speaks as follows: "Dr. Rockwell had said that faradism acted on the intra-muscular nerves, and these being paralyzed in peripheral lesions, faradism failed to produce contraction of the muscle; while galvanism, acting on the muscular fibres, did produce contractions. He claimed that such a statement of physics was absolutely erroneous. The reason why the faradic current did not produce reaction in the paralyzed muscle was that the interruptions were too rapid for the diseased muscle to respond. Make the connection slowly and contraction would follow. There was no difference between galvanism and faradism in this respect."

As no opportunity was afforded at the time, allow me now to correct the erroneous impression that must have been produced in the minds of some by these statements. When there is no rheotome attachment, the momentary impulse induced in a secondary coil through its proximity to the primary coil, undoubtedly exerts a more powerful contractile influence than if these impulses followed each other with infinite rapidity. But a single "make and break" does not constitute the faradic current.

It is the faradic current which fails to cause contractions in certain forms of facial paralysis, and that one cause, *but by no means the only cause*, of its failure to produce contractions is because of the rapidity of its interruptions, no one denies. I have always taught that between faradism and galvanism the difference is mainly in degree rather than in kind, although the difference in degree is so wide as practically to amount to a difference in kind. As to the fact that the faradic current stimulates the muscles to contract through its action on the intra-muscular nerve-endings rather than on the muscular fibres, there is not, as I am aware, any dispute. When Dr. Starr states that there is no radical difference between galvanism and faradism in respect to the production of muscular contractions, he is very much in error. No helix can be so constructed as to

bridge the difference in the degree of their power in this respect, and in certain cases of degeneration of nerve-structure, where the galvanic current still causes reactions, the single shock of the induction current fails, equally with the rapidly interrupted faradic current, to call forth muscular contractions.

A. D. ROCKWELL, M.D.
113 WEST THIRTY-FOURTH STREET.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 14 to April 20, 1889.

UNDER authority from the Secretary of War, conveyed by letter of the 16th ultimo from Division Headquarters, the post of Fort Lisseton, Dak., will be discontinued June 1, 1889. Headquarters Department of Dakota, St. Paul, Minn., April 8, 1889. Special Orders, No. 35.

SMITH, H. K., Lieutenant-Colonel and Surgeon. Reports address of New Army Building as at No. 39 Whitehall Street, New York City. April 18, 1889.

WILLIAMS, JOHN W., Major and Surgeon, died at Jackson Barracks, La., April 15th, at 5 P.M.

HAPPERSETT, JOHN C. G., Major and Surgeon, is relieved from duty at Willet's Point, N. Y., and ordered to report to the commanding officer at Atlanta Barracks, Ga., for duty as Post Surgeon at that point. Par. 12, S. O. 88, A. G. O., April 16, 1889.

EWEN, CLARENCE, Major and Surgeon, promoted to Surgeon, with rank of Major, to take effect April 15, 1889.

WOODRUFF, CHARLES E., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Mackinac, Mich., and ordered to Fort Gaston, Cal., for duty. Par. 14, S. O. 86, A. G. O., April 13, 1889.

MCKEE, JAMES C., Lieutenant-Colonel. Leave of absence granted in S. O. 44, February 25, 1889, A. G. O., is extended seven days. Par. 11, S. O. 86, A. G. O., April 13, 1889.

POLHEMUS, ADRIAN S., Captain and Assistant Surgeon, is relieved from duty at Fort Gaston, Cal., and ordered to Fort Monroe, Va., for duty. Par. 14, S. O. 86, A. G. O., April 13, 1889.

APPEL, AARON H., Captain and Assistant Surgeon, is granted leave of absence for twenty-one days. Par. 1, S. O. 38, Headquarters Division of the Missouri, April 16, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending April 20, 1889.

BYRNES, JAMES C., Passed Assistant Surgeon, detached from special duty at Norfolk, Va., and ordered to the Chicago.

HEFFENGER, A. C., Passed Assistant Surgeon, granted leave of absence for six months, with permission to leave the United States.

LEACH, PHILIP, Passed Assistant Surgeon. Leave of absence extended six months, with permission to remain abroad.

LOUNDES, C. H. T., Assistant Surgeon. Ordered to Naval Academy, Annapolis, Md.

MCCORMICK, A. M. D., Assistant Surgeon. Detached from the Vermont, and ordered to the Chicago.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending April 20, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	8	4
Scarlet fever	446	56
Cerebro-spinal meningitis	4	4
Measles	153	15
Diphtheria	183	43
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

ELECTROLYSIS OF THE EUSTACHIAN TUBE.—Drs. Cumberbatch and Steavenson report in *The Lancet* of November 24, 1888, a number of cases of obstruction of the Eustachian tube relieved by electrolysis. The instruments employed consist of a vulcanite Eustachian catheter and an electrical bougie. The bougie is made of a number of fine copper wires about seven or eight inches long, insulated by vulcanite to within an eighth of an inch of their ends. The ends of the wires are soldered into a nickel-plated metal cap. The bougie is small enough to pass along the catheter, and exceeds it in length by about one inch. The handle end of the bougie is provided with a binding screw, to which the insulated copper wires are also attached, for the purpose of connecting a rheophore from the battery. On this end of the bougie an inch is marked off divided into eighths. Each eighth of the inch passes into the catheter as one eighth protrudes at the other end. It is therefore possible to tell, when the catheter is in the orifice of the Eustachian tube, how much of the bougie is in the canal. On the catheter there is a metal ring, or some other mark, as in all catheters, to indicate the position of its end when it is being inserted. The operation is performed in much the same way as the electrolysis of the other mucous passages which has recently been described. A pad connected with the positive pole of a battery is moistened and placed at the back of the patient's neck. The Eustachian catheter is then passed along the nostril into the tube, and the bougie, already attached to the negative pole of the battery, is passed along it as far as it will go, until it meets an obstruction. The circuit is then closed. A galvanometer should be included in some part of the circuit, and the strength of the current increased until a strength of four milliampères is obtained. A frizzling noise will be heard by the patient in his head, usually likened to the frying of fish; and the operator, by approaching his ear to the catheter, can hear the crackling produced by the frequent breaking of minute bubbles of gas. The electrolysis is kept up for four minutes, and usually before the expiration of that time, if it is possible that the obstruction can be removed, the bougie can be pushed on for a small distance, sometimes for its full length. Generally, on the first occasion the Eustachian tube is rather sensitive, but it seems to acquire toleration for the process, and at no time is so much discomfort experienced as might be expected from setting up chemical decomposition in the middle of the head. The authors state that they have met with no unpleasant experiences in a number of cases thus treated, nor have the patients ever complained of more than very temporary discomfort. In those cases in which the deafness was due to a simple obstruction of the Eustachian tube, the results obtained were, it is claimed, most encouraging.

STERILITY IN WOMEN.—Dr. Parvin says that ordinarily one woman in eight is sterile; but in women who have fibroids, one in three is sterile.

The Medical Record

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Original Articles.

THE MANAGEMENT OF HIP-JOINT DISEASE FROM AN ANATOMICO-PATHOLOGICAL BASIS.

BY A. M. PHELPS, M.D.,

NEW YORK.

THE diversity of opinions in the profession as regards the management of morbus coxarius has led me to present this paper upon that subject to-day. The plan of treatment advocated by many of the American orthopædists is extension by means of some form of portable apparatus which allows of free motion of the diseased joint during locomotion. But all, with an occasional exception, appear to unite upon the idea that extension is the first principle in the treatment. By extension of a joint we do not mean that the joint surfaces are separated, but that intra-articular pressure is relieved, and the joint protected from the trauma due to reflex spasm of the muscles.

Opposing this idea are Thomas and his followers, who believe that the joint should be absolutely immobilized, that the patient should never be allowed to walk upon the apparatus, but use crutches, and that all forms of extension apparatus are entirely useless. And then we have the third school, who believe that the disease is *constitutional*, and who advocate the use of local applications—constitutional treatment, fresh air, etc.—paying but little attention to the mechanical treatment of the joint.

It seems to me that those who have carefully observed tubercular inflammation of this joint or its appendages will have been convinced that the spasmodic action of the muscles is a very important element in producing the destructive changes which so frequently and so generally follow in joints not treated.

Thomas denies that there is spasm of the muscles about the joint. The American surgeons seem to be pretty generally convinced that spasm of the muscles always occurs. I believe that all cases of hip-joint disease are attended with spasm of the muscle; that the spasmodic action of the muscles produces great intra-articular pressure; that the trauma resulting is the chief factor in producing destruction of the joint. Volkman, Albert, and Koenig demonstrated that inflammation of the hip-joint begins as a simple inflammation, either in the soft parts or the bony structures, subsequently becomes tubercular by inoculation, then purulent; in other words, nearly all joint affections of a chronic nature are tubercular. The idea that *tuberculosis of joints is a local disease due to accidental inoculation and not to a constitutional or strumous condition, which means nothing, I most heartily indorse.* The irritation of the peripheral extremities of the nerves in or about the joint produces spasm of the muscle, the spasm of the muscle in its turn destroying the joint by trauma, aided by the rapid reproduction of the bacilli of tuberculosis; moreover, that if these cases of chronic tubercular joint diseases are perfectly immobilized and the intra-articular pressure removed, nature will take care of the tuberculous material, and the same results should be attained in hip-joint disease as in that of the knee. Bone abscesses will become arrested, or, if they do rupture into the joint, the quantity of pus will usually be limited.

Those gentlemen who advocate the constant moving of the joint during inflammation argue that anchylosis will certainly follow unless motion is kept up. Thomas, of Liverpool, says that anchylosis is more certain to follow if motion is allowed, and that an inflamed joint is not so likely to anchylose if absolutely immobilized; that the anchylosis which follows is produced by the severity of the inflammation, and not by immobilization.

Many also teach that healthy joints will become anchylosed if immobilized for any considerable period. In answer to them I will say that I have immobilized inflamed hip-joints from ten months to a year and a half without producing anchylosis; that I have also immobilized healthy joints in animals from six weeks to four months without producing anchylosis, as these specimens will illustrate. (Specimens were shown of joints of dogs immobilized in the Loomis Laboratory for four months by means of plaster of Paris, which to all appearance were normal.)

Two cases of morbus coxarius were presented, one of which had been secured in a Sayre wire cuirass for eight months without movement. The hip-joint was found freely movable. The other case was one of extensive abscess of the hip-joint, which had been freely opened and washed out. The boy had been fixed in the portable bed for five months, the joint being kept perfectly at rest. The joint was freely movable, and but little pus discharged from the sinus, perhaps two drachms in one week.

Where abnormal intra-articular pressure is present there is danger of destruction of the head of the bone even in a healthy joint, as is illustrated by this specimen which I hereby present. The hind leg of the dog was fixed over his back with plaster of Paris in a cramped position. At the end of six weeks he was killed and the hip-joint examined. The head of the bone and acetabulum were red and congested, and the cartilage was commencing to disintegrate. The knee-joint, in which no intra-articular pressure was made, was found normal.

To the gentlemen who argue that motion should be permitted in an inflamed joint, I will say they seem to forget that one of the laws of surgery is that where a part is inflamed it should be put at rest whether it is muscle or joint, or any other part of the body that can be immobilized. By constantly moving the joint the delicate new tissue which nature is trying to produce is broken up, which may lead to destruction of the joint, either by necrosis, anchylosis, or cicatricial contraction of the capsule.

The spasm of the muscle is due to reflex irritation of the peripheral extremities of the nerves supplying the bony or soft parts of the joint. The atrophy of muscle which follows I believe to be produced mechanically, the result of reflex contraction. The muscles of the leg in the dogs which were immobilized for three and four months were found to be extremely atrophied, although, as you have seen, no disease was present in the joints or bone. However, this is still an open question, Barwell believing it to be a true atrophy of degeneration due to nerve-disturbance. The atrophy is in proportion to the severity of the reflexes. The contraction of muscle is in proportion to the reflex irritation; the reflex spasm in proportion to primary irritation of peripheral nerves in or about the joint.

Reflex spasm is greater in bone disease owing to the greater pressure exerted upon the nerve-filaments, and much feebler when only soft parts are inflamed. Atrophy

of the muscle is frequently seen where no bone disease is present. It is more likely to follow bone disease on account of the severe reflex spasm. All the muscles about the hip-joint are more or less affected by spasm in inflammation. Those most notably affected are the abductors, adductors, and flexors. The spasmodic and rigid contraction of these muscles, together with the rotators, produces limited motion in hip-joint disease. The amount of contraction necessary to produce this limited motion causes great intra-articular pressure and leads to congestion and necrosis either of the head of the femur or of the acetabulum, the bacilli playing a secondary part and depending to a certain extent upon the constant irritation and local rise of temperature for their growth.

I fully agree with Sayre, Taylor, Barwell, Marsh, and

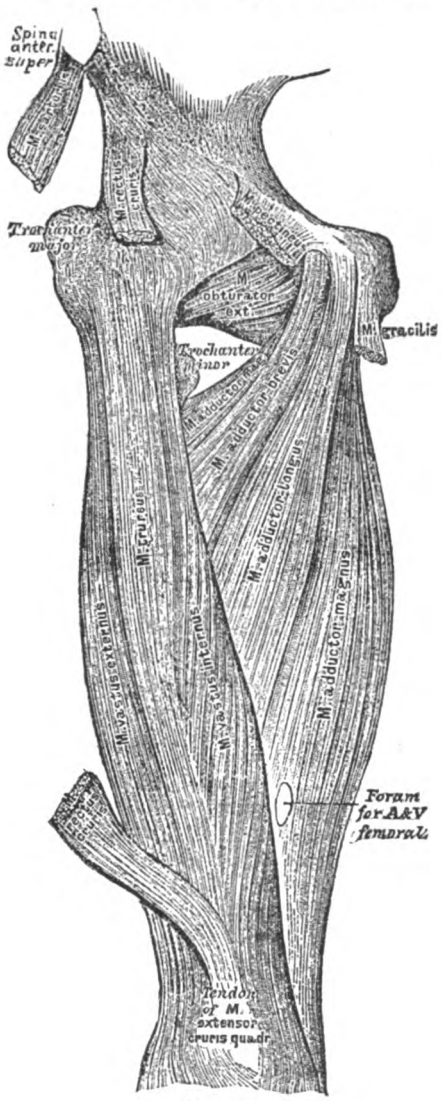

Fig. 1.

others, that spasm of the muscle should be overcome by extension. I also fully agree with Thomas, of Liverpool, that every joint should be fixed and absolutely immobilized until all inflammatory action has subsided and a cure effected. But I do not believe that immobilization of the joint can be accomplished without extension; neither do I agree with the first-named gentleman that extension immobilizes a joint sufficient to get the best results possible, but that a combination of the principles of fixation and extension should be the law. Hence the long traction splint which admits of motion does not immobilize, and the patient produces injury of the joint every time he steps upon it, as is evidenced, in the vast majority of cases, by the almost constant increase of the deformity after the splint is adjusted. Neither does a Thomas splint produce extension; hence there must be abnormal intra-articular pressure when spasm or contraction of muscles is present which must produce congestion of the head of the bone. And then, if extension is to be applied it should be in the direction opposite to the line of traction made by the muscles. In other words, to apply extension to a hip-joint we should not only make traction in the line of deformity but also in a line at right angles to that deformity. In other words, to relieve perfectly intra-articular pressure extension must be made in a line corresponding to the axis of the neck, and not with the axis of the shaft, for the following reasons: The adductors and abductors pass from the femur diagonally across the body to the pelvis, as Figs. 1 and 2 will demonstrate. These, with other muscles, are the ones affected by spasm. When they contract the head of the bone is drawn firmly into the acetabulum, the force operating on a line corresponding to the axis of the neck. The flexors act on a line corresponding to the axis of the shaft.

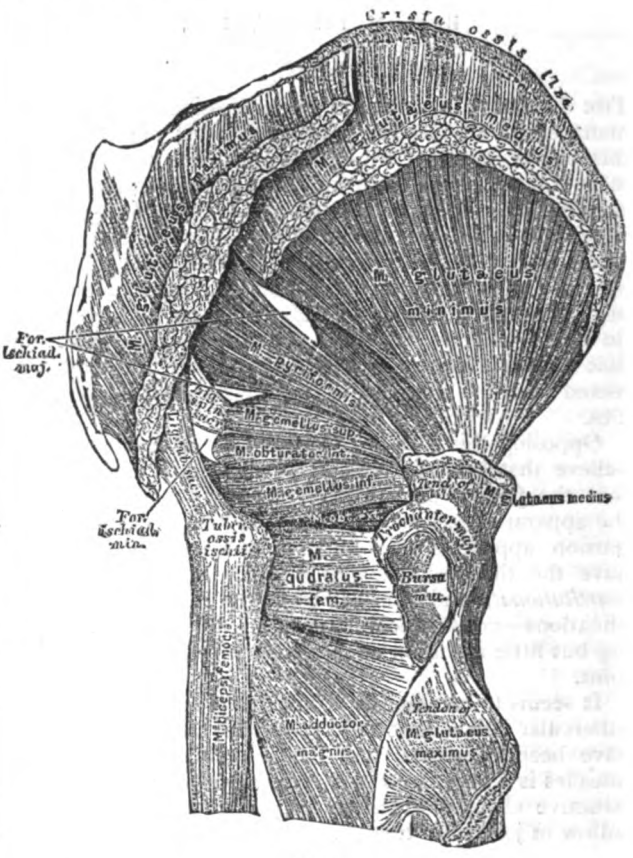

Fig. 2.

No apparatus has heretofore been devised which will so perfectly fix a hip-joint as double extension in bed—the body and well leg fixed to a long splint—first recommended, I believe, by Dr. Sayre (see Fig. 3). The slipping of the bandages proved to be a nuisance. This led me to substitute the plaster of Paris, which meets every requirement. The splint should extend to the axilla. The diseased limb should be held in the deformed position during its application, that the body and healthy limb may be in a normal position. The jury-mast is adjusted only in cases of spinal caries, cervical or dorsal.

The treating of a case in bed for a long time I do not believe to be good practice. But during the active stage of hip-joint disease, whether it is in the first, second, or third, the patient should be put to bed with the two lines of extension and fixation dressing until the active symptoms and deformity have entirely disappeared, and the spasm of the muscle is no longer present. Then, in small children, they should be put into a Sayre's wire cuirass, or the portable bed with the two lines of extension, such as I show you here (Fig. 4).

A board is cut to correspond to the length and width of the child (Fig. 5). This is carefully padded. The child is now laid on the board and enveloped with a

plaster-of-Paris bandage from the feet to the axilla to a thickness of three-eighths of an inch. When the plaster is set the front is cut away. This bed can now be lined and a front put on it and lacings put in, or the child can be held in place by means of bandages. As the plaster bandages are rolled on they should be nailed to the edges of the board, thus making the board and plaster one. This bed will be found to fit better, be much lighter, and more convenient to make than the wood cuirass.

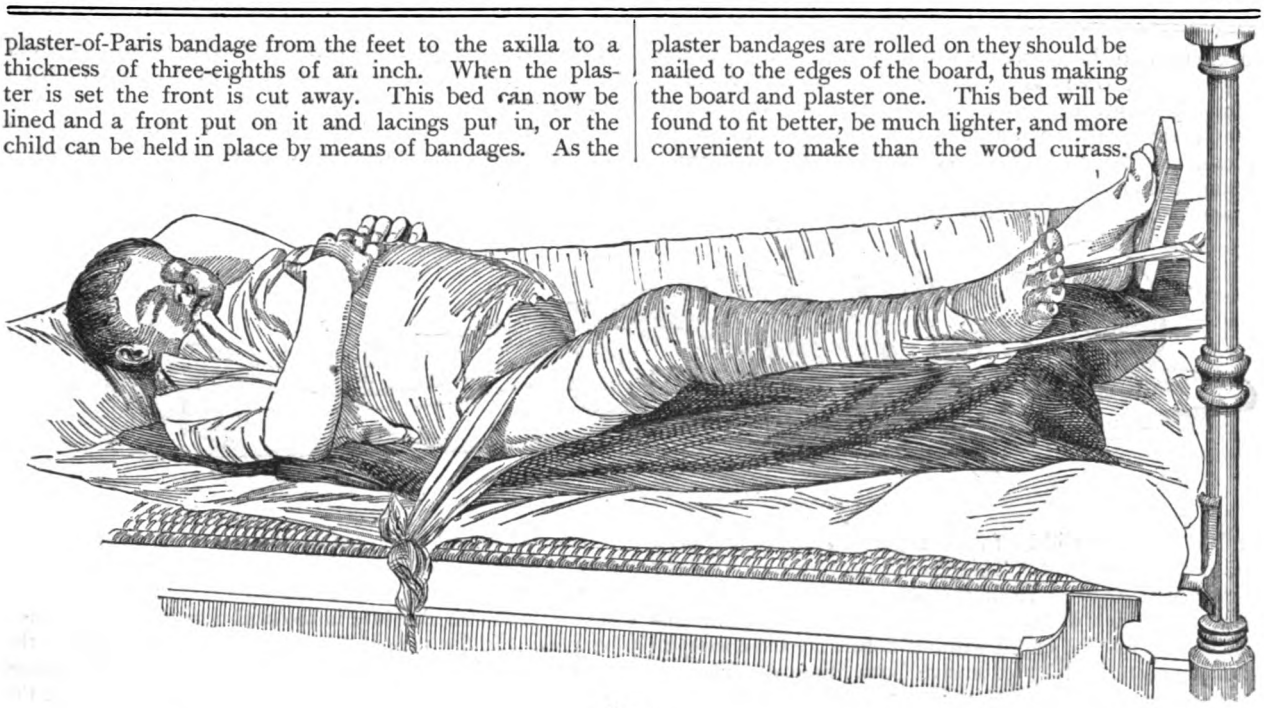

FIG. 3.

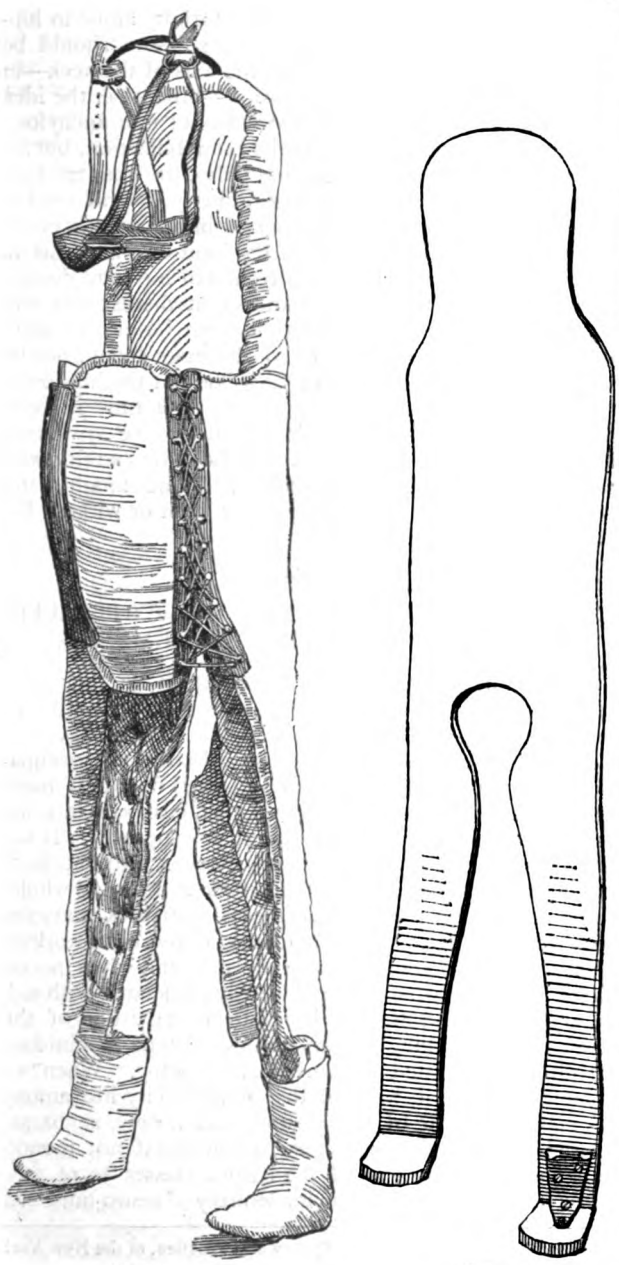

FIG. 4.

FIG. 5.

Extension is made to the foot-piece, and lateral extension by cutting away the side a little and putting in a staple (see Fig. 6, to which the bandage is tied).

The portable bed possesses nothing superior to the wire cuirass to recommend it; only its cheapness, costing, as it does, about three dollars, and then a skilled mechanic is not required—any practitioner would be equal to the task. This will enable the mother or nurse to carry the child about, and the hip joint is perfectly immobilized by fixation and extension applied in the proper lines. After the storm has passed and the legs are parallel, then a splint such as I here present can be applied, putting the patient upon crutches, with a high shoe on the well leg, or when he is convalescent allowing him to walk upon this hip-crutch. (Figs. 7 and 8.)

Every stage of hip joint disease should be treated precisely the same, with certain modifications, beginning the treatment in bed, applying extension and fixation as previously described until the two limbs are parallel, and as long as muscular spasm and evidences of active inflammation are present. No hip-splint should be applied in bed, because it does not so perfectly extend and immobilize the joint as the means which I have just described. All abscesses should be incised, cutting them their entire length, scooping them out thoroughly, putting in drainage to the point of disease, and entering the joint if the disease is to be found within the capsule; in fact, thoroughly washing, scooping, and cleaning out the joint. A large number of abscesses of the hip-joint are absorbed, but from the fact that one can never tell, but simply give a lively guess as to which abscess will burrow and form sinuses leading to the consequences of pus-absorption, I believe that it is a better rule to operate upon every abscess, noting an occasional exception. When the operation is performed with strict antiseptic precautions, the operator's hands thoroughly cleansed, the skin carefully washed and shaved, the instruments sterilized by boiling for fifteen minutes before the operation in an antiseptic solution, and the dressing and catgut perfectly antiseptic, a rise of temperature following the operation will seldom be seen, but, on the contrary, these patients will take their first meal for weeks after an operation of the kind.

If the advocates of the non-operative interference of these abscesses will designate to us which abscess will be absorbed and which will produce bad results we will cease operating upon such abscesses as will be absorbed, but so long as that line is not drawn, and knowing perfectly well that quite a considerable per cent. of the cases of hip-joint disease die from pus-absorption and its con-

sequences, and that no harm will ever follow the cutting for pus if the operation is properly performed, whether it is in a joint, in the muscles, in the eye, the brain, or any of the great cavities of the body, we should continue to operate as we have in the past. Another advantage—by opening the abscesses the joint can be carefully and intelligently explored with the finger, and frequently the tention of the capsule by pus or synovial effusion should be relieved either by aspiration or incision; then the traction forces will not produce pain.

To conclude, my observations lead me to believe that the most serious element of destruction in hip-joint disease is the trauma and pressure produced by the spasm of the muscle; that tubercular will recover as surely as non-

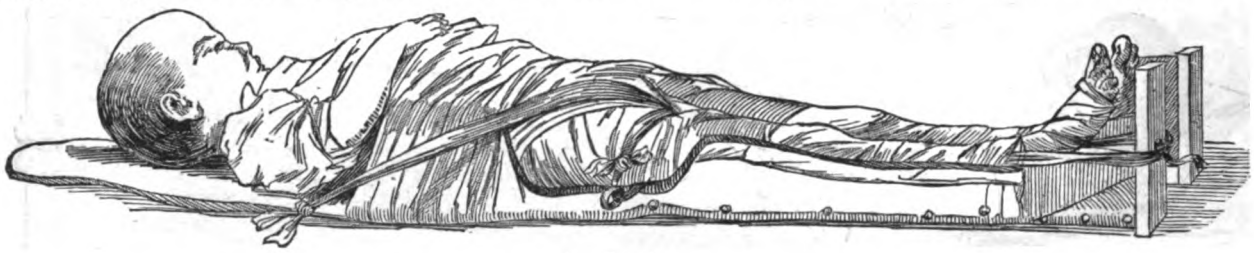

Fig. 6.

head of the bone will be found separated from the neck and loose in the joint. This should be removed, thereby rescuing the patient from the danger of "artificial excision," of which we so frequently hear. Hip-joint disease should also be cured without deformity excepting in cases characterized by extensive bone disease. Patients in whom deformity exists, unless proper extension does not overcome it, should be at once operated upon, either subcutaneously or by open incision, and such tissues divided as will allow the limb to be replaced in a normal position.

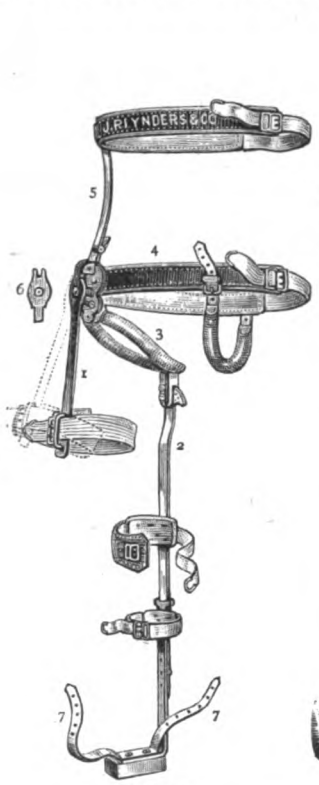

Fig. 7.

Fig. 8.

Fig. 7 represents the perineal crutch with the abduction bar (1) adjustable by means of the key (6), for the purpose of making lateral extension. The steel bar (2) is adjusted to the steel ring (3), which makes a firm crutch, the pressure coming on the tuberosity of the ischium. Adhesive straps extending to near the body from the ankle, furnish means of extension by tightly buckling them to the straps (7, 7), the ring (3) furnishing counter-extension. The rod (5) ending in the upper ring prevents flexion and extension of the legs. The whole splint is intended to prevent every motion at the hip-joint, and at the same time apply extension in a line with the neck of the bone. Fig. 8 shows the crutch and splint adjusted, the patient using crutches, and standing on a high shoe upon the well leg.

Cases of false or true anchylosis of the hip at a bad angle are better corrected by osteotomy through the lesser trochanter. Cases of dislocation should be excised, or osteotomy performed, when subcutaneous division of the muscles will not readily overcome the deformity.

When operating upon abscesses all dead bones should be removed. If the neck and head should be found diseased excision should be most certainly performed. Distubercular joints, if the spasm of the muscle is overcome; that fixation of the joint without extension is an impossibility; that the successful treatment of the joint must depend upon its absolute immobilization, which can only be produced by proper extension and fixation; that the constitutional treatment of hip-joint disease amounts to but little, independent of mechanical treatment; that the mechanical treatment is everything; that extension in a line with the axis of the shaft and deformity alone in hip-joint disease is entirely wrong; that extension should be made in a line corresponding to the axis of the neck—in other words, two lines of extension—otherwise, the idea of extension is not perfectly carried out; that anchylosis of the joint is not produced by its immobilization, but by the severity of the inflammation; that the long traction hip splints in general use neither properly extend neither do they immobilize the joint; that the intra-articular pressure results in the destruction of the joint or anchylosis in the majority of cases; that the results of hip-joint disease should be as good as those of knee-joint disease and will be, provided perfect immobilization can be carried out; that the surgical law in regard to abscesses should not be violated in the treatment of abscesses of the hip-joint; that nearly all cases should be treated for a time in bed; that when the limbs are parallel and the active symptoms have subsided the hip-crutch can be given adults with crutches, and children the portable bed, and, finally, after convalescence, the hip-crutch, either with or without the high shoe and crutches.

THE THERAPEUTIC VALUE OF SYSTEMATIC PASSIVE RESPIRATORY MOVEMENTS.[1]

By HENRY LING TAYLOR, M.D.,

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There is little doubt that the specialization of occupations and pursuits which is such a marked feature of modern civilized life, notably in our cities, has been in some respects a detriment to our physical development. If the hand worker is now less frequently starved outright, he is perhaps more often deprived of sufficient light and wholesome air, and his physical and mental activities restricted to a narrow range. In the commercial and head-working classes excessive competition stimulates, and often necessitates, a war of wits, which is usually associated with sedentary habits, and frequently results in starvation of the tissues, in a spindling or flabby physical type, diminished fertility, and stunted asymmetrical offspring. When we come to analyze it, we find that modern city life among all classes, in spite of much superficial variety, is characterized by nothing so much as narrowness if not monotony, and this is as true of the leisure classes as of any. What can possibly exceed in inadequacy of neuro-muscular

[1] Read before the Section on Theory and Practice, of the New York Academy of Medicine, March 19, 1889.

experience the routine activities of a man or woman of fashion? Probably nothing; but many of our professional and business men working in narrow grooves, under continuous strain, and innocent of the rudiments of a common-sense hygiene, many of our over-worked women and high-pressure children certainly run a good second.

Important regions of the body, as the shoulders, back, and loins, and especially the chest, with the thoracic and abdominal viscera, suffer from our restricted and feeble muscular experiences, with the result of diminished neuro-central tone and general vigor, and it seems to me we frequently have a combination of restriction and irritation, well calculated to produce one-sided and unwholesome, instead of well-rounded and robust, development of the organism. There are always feeble individuals, and competition is always hard on the feeble; with increased friction we must get increased detritus.

Flat and narrow chests, and diminished respiratory power, with feeble vital energy and small endurance, are the frequent expression in the second generation of imperfect circulation, assimilation, and innervation, the result of deficient, one-sided, or strained activity in the parents. Thus we can conveniently group for purposes of study and treatment those conditions resulting from, or dependent on, deficient chest aspiration. The condition of deficient chest power has long attracted the attention of physicians, and many efforts have been made to develop chest capacity and to increase respiratory efficiency, by gymnastic exercises, especially of the upper extremities, by voluntary attempts at deep breathing, by modifications of air-pressure, and by other means.

All things considered, a prolonged out-of-door life, combined with moderately active but varied exercise in the open air, probably furnishes the best remedy for many of the cases we are considering.

Systematic gymnastic exercises, as usually given, are far from satisfactory for this special object. They are not adapted to the weak and feeble, and they are open to the objection that while pulse and respiration are considerably accelerated the conditions are not favorable for thorough lung-expansion. In order to pull, push, or lift with the arms, the breath is instinctively held in order to immobilize the thorax, which is the fixed point from which the shoulder muscles work under these conditions. This is a fundamental difficulty, and, as a matter of fact, we notice that boxers, oarsmen, athletes, and porters, who are characterized by great muscular development about the chest, are frequently round-shouldered and of poor endurance. Measurements are easily increased by piling up muscle on the thorax without necessarily increasing respiratory capacity. Dr. Stanton Allen tells me that a well-known gymnast in this city, who has a chest expansion of ten inches, and enormous muscular development, blows less on the spirometer than before he developed his muscles, and that the same has been noticed in some of his pupils. Of course, gymnastic exercises will increase chest measurement by overlaying the thorax with muscles, and probably in most instances, if judiciously used, real chest expansion will follow from the increased demand, but there will always be the objection I have named in using it in sick people, or primarily for chest expansion. I believe that it may produce chest contraction if injudiciously employed.

Voluntary deep and measured breathing can without doubt accomplish something, but its application is much restricted by its irksomeness and the fatigue it produces. Let anyone take forty or fifty successive full inspirations and he will find it very tedious and very tiring work.

I can conceive that the respiratory efforts which accompany the inhalation of gases, now systematically practised for various purposes, only have some value as a respiratory exercise. Is it not possible that certain much advertised nostrums may be kept alive by the fact that the method of administration involves an imperfect respiratory exercise?

Is there, then, any method by which we can expand the chest freely and regularly, for considerable periods, without undue fatigue to the patient? any way to automatically stimulate this automatic function?

Among the exercises based on the Ling system, which my father used on beginning practice in 1856, and which will be found figured and described in his book,[1] is one where the patient is seated, while the operator, standing on the bench behind him, lifts up the shoulders with the hands under the axillæ; one of his knees supports the patient's back, which is arched backward to produce full inspiration. In another movement the operator, standing as before, grasps the patient's hands and pulls the arms upward and backward against his resistance, after which the patient pulls down the hands of the operator until they lie in front of the chest;[2] this was also given as a purely passive movement, like Sylvester's artificial respiration. These and similar movements were very much used for many years in his practice to increase chest expansion and as a general tonic. Very soon Dr. Taylor began to substitute for the hand of the operator, in many of the active movements, a graduated mechanical resistance, and about 1872 he devised apparatus by which the most important passive movements were given by steam power, among them the passive respiratory movement I have mentioned. This apparatus, called the "respirator," has been in constant daily use since then, and has proved itself a most valuable therapeutic aid, far exceeding the old hand-method in efficiency. We use two respirators, one giving thirteen and the other sixteen full respiratory movements a minute, and the strength of the pull can be exactly regulated. The movement is a purely passive one, except that the handles of the apparatus are grasped by the patient. The patient is seated on a reclining couch, the main levers, bearing the handles, pull the arms of the patient strongly upward and backward, while the chest is arched by the simultaneous backward movement of the upper part of the back of the couch. The main levers are, for most purposes, so adjusted as to slightly raise the patient from his seat at the limit of motion, after which they move downward and forward, allowing the arms to drop by the sides, and the upper part of the back of the couch swings forward on its hinges, to favor expiration. The exercise is given for from ten to thirty minutes at a time, or with the more rapid machine from one hundred and sixty to four hundred and eighty full regular inspirations and expirations at a visit. The respirations of the patient coincide automatically with the movement of the machine.

The actuating mechanism of the respirator consists of two eccentrics symmetrically placed on a counter-shaft; these operate two cranks, to which the long L-levers carrying the handles are pivoted in such a manner that the pivots can be shifted on the crank and lever, and the extent of the stroke increased or diminished at will. The eccentrics also operate the levers which give motion to the adjustable back of the couch. The machine is stopped by shifting the belt to a loose pulley.

Theoretically we should expect, as physiological effects from the use of such a passive exercise, increased oxygenation of the blood and elimination of respiratory waste; increased thoracic capacity and power; better venous return on account of increased thoracic aspiration, and a decided effect on the higher nerve-centres, from improved nutrition and circulation, as well as from direct impression on the centres.

I am indebted to Miss Aimée Raymond for a series of careful observations on the pulse, respiration, and temperature of several patients who were taking the respirator about half an hour daily. In four patients, all the subjects of lateral curvature of the spine, the number of observations was eight to thirteen each. To study the varying results, I took the averages, which I append, disregarding fractions, in the following table:

[1] Theory and Practice of the Movement Cure, 1860.
[2] Op. cit., pp. 216, 217, ed. 1864.

TABLE I.

	Average	Pulse before.	Pulse after.	Temperature before.	Temperature after.	Respiration before.	Respiration after.
Miss M——, aged sixteen; respirator one-half hour.	13 days.	92	90	98.1	98.3	24	24
Miss B——, aged seventeen; respirator one-half hour.	11 days.	94	92	98.7	98.8	27	25
Miss W——, aged eighteen.	13 days.	85	87	98.2	98.8	18	18
Miss L——, aged fourteen; respirator twenty minutes.	8 days..	88	90	97.9	98.0	20	19

From this it is seen that in the two with the slower pulse an increase of about two beats was noted, while in the two with the more rapid pulse a decrease of the same amount followed the use of the respirator. In two the respirations remained at the same rate after the exercise, and in two they were slightly diminished in frequency. In every one of the four the average temperature under the tongue was found slightly increased after the exercise —the general average being 98.2 before exercising and 98.4 after—due, as I take it, to increased oxidation.

We notice, clinically, that the circulation improves. The cerebral centres are soothed and the patient frequently becomes drowsy under the repeated effortless stimulation of the centres, for we must not forget that we have here a direct means of stimulating certain centres. After the exercise the patient usually feels invigorated, and the chest feels fuller and more expanded. If there has been mental or physical overwork the patient feels refreshed from the more perfect oxygenation of the blood, and the exercise of neuro-muscular arcs habitually neglected, while at the same time the overworked areas are at rest.

After a course of the respirator we usually find improved color and circulation, often improved appetite and digestion where these are at fault, and usually some increase in weight when the patient is thin. In nervous patients, better sleep and better co-ordinated neuro-cerebral action often follow.

The effect on the chest expansion is usually quite marked after a few weeks, sometimes after one or two. The respirator has been most frequently given, not so much for its special effect in developing chest expansion as for its effect on the circulation and as a general and special tonic. But during the last five or six years

TABLE II.

No.	Sex.	Age.	Date.	Chest, inches.	Date.	Chest, inches.	Number of months.	Gain, inches.
1.	M.	14	Oct. 11, 1883	27½-30¾	Nov. 13, 1883 ...	27½-31¼	1	¾
2.	M.	16	Oct. 11, 1883	27½-31..	Nov. 13, 1883 ...	27½-31¾	1	1¼
3.	M.	15	Feb. 18, 1884	30¾-34..	March 21, 1884..	30¾-34½	1	¾
4..	M.	15	Jan. 23, 1884	30¾-32¾	March 21, 1884..	31-34....	1	1¼
5..	M.	19	May 26, 1884 ...	33¾-36½	July 9, 1884	35-37½..	1¼	1
6..	F.	35	Dec. 1, 1884.....	28-29½..	Feb. 16, 1885....	28¾-30½	2½	1
7..	M.	15	Oct. 4, 1886	31¼-32¼	Nov. 2, 1886	31¾-33½	1	1¼
8..	M.	16	Jan. 5, 1887	31¾-33..	Jan. 17, 1887 ...	32¼-34..	½	1
9..	F.	8	Sept. 9, 1887	20½-22½	Oct. 23, 1887....	22-24....	1½	1½
10..	F.	11	Sept. 21, 1887 ...	24½-26½	Nov. 12, 1887...	25-27....	1¼	1
11..	F.	9	Oct. 1, 1887	24-25¼..	Nov. 12, 1887...	23¾-25½	1⅛	¼
12..	F.	7	Feb. 5, 1887	23½-24..	April 7, 1887....	24½-26½	2	2¼
13..	M.	16	April 19, 1888....	30½-32..	May 30, 1888 ...	31¼-32¾	1½	¾
14..	M.	18	April 4, 1888.. ..	31¾-33..	May 3, 1888	32-33⅞..	1	⅞

I have made, from time to time, a considerable number of careful chest measurements. I have taken fourteen cases without selection, except that cases of well-developed lateral curvature of the spine are not included (Table II.), and find that the measurements, after a month or two of the respirator—usually six times a week for from twenty minutes to half an hour a day—has produced an average gain of just about one inch in the chest measurement on full inspiration.

The patient often continues to gain in chest measure for a considerable time, even when the visits are much less frequent, but the rate of increase is not so rapid after the first two or three months. When the exercise is discontinued frequently some of the gain is lost, but a good deal is retained. In all of the fourteen unselected cases there was some gain at the end of the short period given. Whatever the amount of gain in chest capacity, there is nearly always marked improvement in health.

A lady, aged thirty-five, not included in the table, who was taking the respirator for its tonic action, told me that the waists which had always fitted her had become so much too small after a month of the exercise that she was no longer able to put them on, though she had not gained in weight. It should be remembered in considering these results that they were all obtained in delicate, or even sick people, with particularly deficient chest capacity. Chest measurements are subject to many inaccuracies, but we can, I believe, get useful information from repeated observations.

This exercise is particularly useful in cases of flat, narrow, shallow, weak, and inelastic chests, whether due to faulty development, phthisical predisposition, old pleuritic exudations, round shoulders, or other causes; but, valuable as it is in such cases, I believe that still greater benefit is derived from passive respiratory movements systematically employed in the actual physiological and clinical effect of the exercise, irrespective of its expansive power on the thorax.

Lateral curvature of the spine always diminishes respiratory capacity, and for this and other reasons I prescribe this exercise for such cases in connection with other treatment. Lateral curvature is one of the most difficult things to treat in orthopedic practice, and I do not claim to be always able to secure brilliant results, but I have noticed that whatever be the effect I am able to produce on the curvature, my patients almost invariably improve in health and vigor. The exercise is indicated in anæmia and in convalescence from exhausting disease. Another class of cases in which its use is followed by particularly gratifying results is that of the functional neurotics, ranging from anæmic, delicate, and overworked persons—women especially—of flabby fibre and feeble respiratory power, through the victims of backache, headache, the neuralgic, dyspeptic, and semi-uterine type, up to the well-developed neurasthenics and hysterics, even including the bed-ridden neurotics. This is a large and heterogeneous class of invalids, many of them very great sufferers, who should command our best skill and sympathy. In no class of cases is routine treatment of any kind less applicable. Each case must be treated and guided on its own merits after the closest analysis and discrimination of the conditions and indications. In nearly all, however, we need to improve the quality of the blood and the general health, and to regulate nerve-centre action. The respirator is one of the means at our command to fulfil these indications. For we have here (and this is only one of many exercises, but perhaps on the whole the most important) a means of directly affecting the nerve-centres as well as the circulation. We may begin with special exercises in bed, if need be, and after a time are able to add the passive respiratory and other passive movements in the exercise-room. This idea is perhaps the most fruitful of any in connection with the application of the respirator, but I have not time to develop it here. I refer those interested to a paper on "The Hygiene of Reflex Action," published last March in the *Journal of Nervous and Mental Disease*. I wish to call attention to the circumstance that the action of the respiratory and similar passive movements for the trunk and extremities have this in common with the use of massage, electricity, and hydro-therapeutics—all valuable when used for specific indications—that they act directly on the nerve-centres by peripheral stimulation. But I emphasize a marked difference in the kind of stimulation. The respiratory and similar movements are not a simple shock or stimulus, as

shown of stimuli, to the centres, but train and educate them in coherent associated movements by a series of changes in position and muscular tension of the arms, trunk, and thorax, and modify their tone and action by a series of impressions on the centres which react to changes in the respired air and circulating blood. Each has its appropriate indications and inherent limitations; I simply note a difference. There is an equally radical and important difference in the general effect produced by such exercises, and by gymnastics, which consists in the almost total absence from the former of voluntary or violent effort and consequent fatigue, rendering them applicable to the very weak and delicate. Here, too, each has its appropriate field.

The application of systematic, passive respiratory movements to the treatment of some forms of organic heart-disease, and to certain diathetic vices and faults of elimination where it might seem indicated, remains to be studied; but we have in them a tested means of—1, expanding and strengthening the chest, and invigorating the respiratory function; 2, oxygenating the blood; 3, equalizing and toning the circulation; 4, regulating and co-ordinating nerve-centre action; 5, improving general vigor.

201 WEST FIFTY-FOURTH STREET.

THE BEHAVIOR OF HYDROCHLORIC ACID IN THE STOMACH OF PHTHISICAL PATIENTS.

WITH A FEW REMARKS ON THE PRESENCE OF HYDROCHLORIC ACID IN SEA-SICKNESS.

BY MAX EINHORN, M.D.,

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As long as there is no specific remedy against tuberculosis, the sole treatment must resolve itself into one of strengthening. We must, first of all, consider how to feed the patient properly, and how to strengthen the organism.

It is therefore important to discover the condition of the digestive apparatus in phthisis pulmonum. The products of the stomach secretion are now easily obtained, and thus the condition of the stomach, in cases of phthisis, has been examined by Edinger,[1] already, in 1881. In several cases of phthisis pulmonum, which were accompanied by amyloid degeneration of the organs, Edinger did not find any hydrochloric acid in the stomach; in two of these cases there was a pronounced amyloid degeneration of the vessels of the stomach. Of a third case of phthisis Edinger[2] says the following: "In a third case of phthisis pulmonum, in which the autopsy showed vast amyloid degeneration of the liver, spleen, kidneys, and only a small degree of degeneration of the vessels of the stomach and intestines, the free hydrochloric acid was twice wanting in the fourth hour of digestion. . . . The question whether the absence or the diminution in the secretion of free hydrochloric acid in our cases is due to the degeneration of the blood-vessels, or whether it is caused by other conditions, especially by the high degree of anæmia common to all cases, cannot be answered from the number of cases observed. Our experience in this matter is as yet too small."

An article by Carl Rosenthal,[3] entitled "Ueber das Labferment nebst Bemerkungen über die Production freier Salysäure bei Phthisikern," was published in the *Berlin. Klin. Wochenschr.* of last December. In this paper Rosenthal examined the stomach contents of nine phthisical patients, and found an absence of hydrochloric acid in all, although some of the patients furnished no stomach complaints whatever, and had a good appetite. Rosenthal writes as follows: "It was shown that the stomach contents of patients with phthisis pulmonum, in the progressed as well as in the early state, contained no free hydrochloric acid." Rosenthal does not state whether he examined only these eight patients in reference to their stomach, and found hydrochloric acid absent in all, or whether he examined a larger number and failed to find hydrochloric acid in only eight. But, from his remarks above, it is evident that Rosenthal holds the opinion that phthisical patients have no free hydrochloric acid in their stomach. Taking into consideration the great importance this subject bears upon the dietetics of phthisical patients, I thought it necessary to investigate the condition of the stomach in these cases.

The material consisted of patients at the German Dispensary, and of two at the Montefiore Home for Chronic Invalids. The patients examined had clearly pronounced and easily detected phthisis pulmonum; some of them were already in the *stadium ultimum*. All examinations of the stomach were made one to one and a half hour after Ewald's Probefrühstück (trial breakfast), consisting of one cup of tea (without any sugar or milk), and a roll. The stomach contents were obtained by the expression-method, filtered, and examined. To test for hydrochloric acid we made use of only Günzburg's phloroglucin vanillin reaction, as being the best and surest test, according to my report of last year.[1] The degree of acidity was made out by the number of c.c. of a $\frac{1}{10}$ normal solution of sodium hydrate used to neutralize 100 c.c. of the filtered stomach contents, and written in this way.

The results of the investigation I subjoin in the table on next page:

We found it advantageous to range the patients in our table according to the degree of acidity. As the degree of acidity normally varies one hour after the Probefrühstück between 40 to 60, the following can be noted with regard to the above-mentioned table:

1. Among the 15 cases of phthisis pulmonum examined, free hydrochloric acid was absent only in two of them (14 and 15); in a third patient (11) the hydrochloric acid was wanting but once, and was present upon two other examinations; in all other patients the hydrochloric acid was always present. In this way our results differ from those of Rosenthal.

2. As regards the acidity, in 5 patients (6 to 10) it was found normal; 5 (1 to 5) showed hyperacidity; and 5 (11 to 15), a diminution in the degree of acidity; among the last group there were 2 with a total absence of free hydrochloric acid.

3. Only 1 patient (4) had in his stomach, after the trial breakfast, the remnants of the yellow of an egg, which he ate on the day previous, and that but once. In all other patients we found in the stomach contents no food whatever except the fine pieces of the roll. Their stomachs must have been empty before taking their breakfast. Therefore it can be concluded that the motile power of the stomach was not diminished in a very high degree.

4. In most cases a record of the appetite was kept. *A priori*, one would be inclined to think that the appetite is in a certain degree dependent upon the amount of gastric juice secreted. As the amount of gastric juice secreted is measured by the degree of acidity, the appetite ought to be good where hyperacidity, or a normal amount of acidity, exists, and bad where there is present a diminished degree of acidity. But this is not true, as can easily be seen from the above table. Three patients with hyperacidity (1, 3, and 4), and 2 with normal acidity (8 and 10), complained of poor appetite, whereas patient No. 15 had a good appetite, although there existed a state of complete absence of the free hydrochloric acid in his stomach.

In many of the patients we found, in the stomach contents obtained by means of the stomach-tube, sputa showing the same qualities as they appear when being ex-

[1] Edinger: Deutsch. Arch. f. Klin. Med., Bd. 29, p. 555.
[2] Edinger: l. c., p. 574.
[3] Carl Rosenthal: Berlin. klin. Wochenschr., 1888, p. 910.

[1] M. Einhorn: THE MEDICAL RECORD, 1888, p. 227.

Table of the Results Obtained from the Examination of the Stomach of Phthisical Patients.

No.	Name.	Age.	Duration of phthisis.	Appetite.	Date of examination.	Acidity.	H Cl.	Lactic acid.	Propeptone.	Peptone.	Rennet.	Observations.
1..	M. Gillman.....	17 years..	8 months ...	Quite bad ..	I. 20, 1889.....	70	+	o	+	+	+	Sputum present in the stomach contents.
2..	Kulich	32 years..	1 year.....	.....	II. 10, 1889	70	+	o	+	+	+	
3..	H. Schubert.....	20 years..	6 months ...	Not good..	IV. 18, 1889	70	+	o	+	+	+	
4..	J. Prussan.....	29 years..	6 months ...	Poor	*a.* IV. 19, 1889.	72	+	o	+	+	+	Much viscid mucus and sputum present. Remnants of the yellow of an egg present, which patient had eaten the previous evening.
					b. IV. 25, 1889.	50	+	o	+	+	+	No sputum in the stomach contents.
5..	M. Sedlok.....	19 years..	8 months ...	.....	III. 10, 1889	64	+	o	+	+	+	
6..	W. Bauch	22 years..	6 months ...	.....	I. 25, 1889	54	+	o	+	+	+	
7..	M. Mann.....	25 years..	9 months ...	.....	IV. 7, 1889.....	50	+	+traces	+	+	+	Dextrin +.
8..	S. Silbert, of the Montefiore Home.	34 years..	1 year.....	Bad.....	IV. 16, 1889.....	50	+	o	+	+	+	Sputum present.
9..	A. Braun.....	22 years..	6 months ...	.....	I. 12, 1889	50	+	o	+	+	+	
10..	J. Donn.....	48 years..	8 months ..	Poor	IV. 10, 1889 ...	50	+	+traces	+	+	+	
11..	G. Flocke.....	35 years..	1 year and 6 months.	Poor	*a.* XI. 29, 1888.	46	+	o	+	+	+	Sputum present.
					b. II. 9, 1889..	18	o	+	o	o	o	Sputum present.
					c. IV. 18, 1889.	42	+	o	+	+	+	Sputum present.
12..	F. Wagner.....	26 years..	1 year.....	Was poor; after creosote good.	IV. 24, 1889.....	28	+	o	+	+	+	Some sputum present.
13..	J. Warbin	55 years..	2 years	.....	I. 23, 1889.....	20	+	+	+	+	+	Much viscid mucus and sputum present.
14..	G. Bernhard.....	47 years..	1 year.....	Poor	I. 13, 1889.....	15	o	+	o	o	o	Sputum present.
15..	S. Lewin, of the Montefiore Home.	23 years..	1 year and 6 months.	Good.....	IV. 16, 1889.....	15	o	+	o	o	o	

pectorated by the patients; the sputa found in the stomach contents also presented the same bad and fetid odor. As regards the cause of dyspepsia in patients with phthisis, the views as yet are not settled. Cannot it be imagined that in many cases the cause of the dyspeptic conditions is to be looked for in the swallowed sputa? The sputa and the secretions from the nose and fauces, flowing down through the œsophagus into the stomach irritate the stomach walls and give rise to abnormal conditions.

As regards the therapeutics, it can easily be seen from the investigation that we must not give hydrochloric acid to phthisical patients for a deficient appetite; for in most cases there was no decrease in the amount of hydrochloric acid secreted by the stomach. On the other hand, we warmly advise the use of creosote in all cases of phthisis pulmonum. All the above-mentioned patients (with the exception of 8 and 15, belonging to the Montefiore Home) were treated with creosote, which I usually give in the following formula:

℞. Creosote 10.0
Tr. gent. comp 20.0
Dose: Twenty drops three times a day in a glassful of water.

In most of the patients taking creosote I could observe a certain decrease of the morbid symptoms; but more evident yet, there was nearly always an increase in appetite.

NOTE.—After completing this article there appeared in Germany at the same time two papers on "Dyspepsia in Phthisical Patients," one written by Klemperer,[1] and the other by Schetty.[2] The results obtained by these authors resemble very much my own. Notwithstanding this fact, I do not consider it necessary to omit the publication of the results of my investigations.

In the second part of my present article I desire to make a few remarks relative to the condition of the stomach, as regards hydrochloric-acid secretion in sea-sickness. In the literature of this subject there is found, as far as I know, but one remark, viz., that of Ewald;[3] the same is translated into English as follows: "Thus I found my own stomach contents, during a nicotine poisoning which lasted but a very short time, completely free from hydrochloric acid; another time, on a sea trip, when I had taken my breakfast on board, and was forced in about an hour to vomit, I could not find in the vomited contents, by means of Congo paper, any reaction."

On my trip from Germany hither, on the steamship Trave, I took up the opportunity of examining the condition of the stomach regarding hydrochloric acid during sea-sickness.

The material consisted in the vomited masses of myself and three other sea-sick people. The vomit was examined for hydrochloric acid by the phloroglucin-vanillin test, and was found as follows:

Table on the Relation of Hydrochloric Acid in the Vomit during Sea-sickness.

Name.	Date.	How long after meal vomited.	H Cl.
1. L. B....	July 21, 1888.	½ an hour.	o
	July 22, 1888.	4 hours.	+
2. M. E.....	July 21, 1888.	20 minutes.	o
	July 21, 1888.	5 hours.	+
	July 22, 1888.	3 hours.	+
	July 23, 1888.	4 hours.	+
3. S. G.	July 22, 1888.	1 hour.	o
4. S. C.....	July 22, 1888.	4 hours.	+

As can easily be seen by the above table, hydrochloric acid was always present in the vomited contents, when vomiting ensued some hours (three to five hours) after partaking of a meal. This proves that the secretion of hydrochloric acid in the stomach during sea-sickness is not checked.

122 EAST FIFTY-NINTH STREET.

NAREGAMIA ALATA.—The air-dried stems and root of naregamia alata or Goanese ipecacuanha, have been the subject of further therapeutic trials by Surgeon-General Bidie, who reports that, on the whole, the results have been satisfactory and such as to encourage the further use of the drug. It is thought probable that in mild cases of dysentery the indigenous remedy may be of use in supplementing the true ipecacuanha. Specimens of the naregamia alata have therefore been planted with a view to testing its rate of growth in the botanical gardens in Nilghiris.—*The Medical Age.*

LONG INCUBATION OF SYPHILIS.—Dr. Falcone reports a case in which the incubation period of syphilis was nearly two months. A man was seized with an attack of typhoid fever, and took to his bed on July 22, 1886. The fever lasted six weeks. On September 15th he felt slight pain at the right side of the frænum. On September 24th induration was present and syphilis was diagnosed. The disease ran a regular course. The patient stated that the last sexual intercourse took place on July 21st, the day before he was attacked by typhoid. According to this the primary sore appeared on the fifty-sixth day after contagion.

[1] G. Klemperer: Berl. Klin. Wochenschr., 1889, No. 11.
[2] F. Schetty: Deutsch. Arch. f. Klin. Med., Bd. 44, Heft 2, s. 219.
[3] Ewald: Klinik der Verdauungskrankheiten, ii., s. 164.

FISTULA IN ANO IN THE FEMALE, OPERATED ON BY SUTURING.

By HUBBARD W. MITCHELL, M.D.,
NEW YORK.

In doing the operation for fistula in ano by suturing with silver wire, a departure has been made from the old method which has been in vogue from time immemorial. This old method consisted, briefly stated, in inserting the finger through the sphincter into the rectum, and passing a blunt-pointed bistoury up the fistulous tract until its end could be felt by the finger; then simultaneously withdrawing both finger and knife, laying open all the tissues by a clean sweep, into the bowel. This included skin, muscle, and sphincter ani. The wound thus made was stuffed with cotton, lint, or an oiled pledget, and left to heal by slowly granulating from the bottom. The patient was put in the knee-elbow position, or astride a chair, or on his back or side, according to the fancy of the surgeon, and many of the descriptions of this operation, in the old text-books, treated of it as a rather trivial affair.

Whenever the wound was left to heal by the slow process of granulation, it was tedious at the best, and weeks were often passed before the patient was about again.

Whenever a fistula in ano exists, whether it is the result of a rectal abscess or a point of ulceration in the rectal wall, it is usually chronic in its character when it comes to the attention of the surgeon. The fistulous tract is usually more or less contracted and indurated, and lined by a freely secreting pus-membrane. The pus may be bland in character, or it may be irritating and extremely offensive. Pain is rarely absent, and this is usually the symptom that leads the sufferer to seek relief. It is sometimes very severe, at other times slight, and is described as dull, or heavy, or aching.

A typical fistula in ano presents, upon examination, a small orifice seated somewhere near the verge of the anus, on one side, or above, or below. It may be close to the external edge of the sphincter ani muscle, or it may be two or even three inches from it. The skin surrounding it presents a contracted and corrugated appearance, and upon pressure exudes a drop of pus.

If a silver probe be inserted in this orifice it will pass upward and inward, and touch the finger inserted in the rectum. Of the varieties of fistulæ it is not necessary to speak, since they all demand about the same method of treatment.

When we are called upon to treat such a condition of things, a question of some gravity confronts us. To be sure, it must be freely laid open, but after it is laid open, what is the next step? If we can help the wound to heal by first intention, and save the patient from the slow process of granulation, we shall certainly accomplish a great deal. It was with this idea in view that a departure was made from the older mode of operating, and an attempt made to close the wound by sutures, just as we would attempt to close any other wound by sutures.

The results attending this effort to induce primary union, by suturing the wound in the operation for fistula in ano, will be seen in the narration of the following cases.

These cases were all in the female, and all of them were complicated by uterine lesions, upon which an operation was done at the same time as the operation on the anal fistula.

Case I.—On June 23, 1887, Mrs. K. G —— presented herself for treatment. She was a widow, thirty-five years of age; had been married eight years before, and six years ago she gave birth to her first child. Has not been pregnant since. Just before her marriage she had an abscess on the right side and a little above the anus. This broke, but has never healed. She has suffered dull pain ever since, and a constant discharge of pus, which has always been more copious while at stool. During the past year her general health has been impaired, and she is now decidedly anæmic. Upon examination she presented the following symptoms: On the right side of the anus and one and one-fourth inch from its verge, was a small, hard, dull-red looking spot, from which fetid pus oozed upon pressure. A probe inserted into the orifice passed upward and backward into the bowel, two inches above the sphincter muscle.

Pain in the back and continuous leucorrhœa led me to examine the uterus. A severe bilateral lacerated cervix uteri was found, with granular, thickened, everted edges, covered with pus, and intensely inflamed. The uterus was sharply anteverted, and pressed strongly upon the bladder.

She had not suspected uterine trouble, but had attributed all her sufferings to her fistula. On July 6th I did the following operation:

She was placed under the influence of ether, and the lacerated cervix closed in the usual manner by seven silver wire sutures. She was then changed from Sims position to her back, a grooved director was inserted in the orifice of the fistula, carried up into the bowel, and then brought out at the anus. Upon this all the tissues were completely cut through, leaving a large open wound. The fistulous tissue could be felt at the bottom of the wound, hard, smooth, and glistening. All this was freely and radically dissected out with the knife and scissors, until nothing remained but a clean, healthy wound. This was thoroughly cleansed, and then closed in the following manner: A strong curved needle, armed with No. 28 silver wire, was inserted one-half inch back from the edge of the wound in the healthy skin, and carried down deeply below the bottom of the wound, and then up and out at a corresponding point on the opposite side. The wire included the entire depth of the wound. Three such sutures were passed, the innermost one close to the edge of the sphincter ani muscle. The wires were then twisted, bringing the edges of the wound closely and evenly together.

Two intermediate silk sutures were used to keep the edges of the skin in continuity. Iodoform was dusted on, and the whole dressed with absorbent cotton, secured by a T-bandage. The bowels had previously been emptied by hot-water enemata, and were now kept quiet by small doses of tr. opii. The patient was now put to bed, and light liquid diet ordered, such as soup, milk, etc. On the seventh day, July 13th, the wires were removed, and the wound had healed so completely by first intention that it was difficult to locate the original site of the fistula. The bowels were moved for the first time by a hot-water enema, without pain.

Three days later, July 16th, the uterine wires were removed, the cervix having also healed by primary union.

The patient was discharged perfectly cured.

Case II.—August 10, 1887. Mrs. A. B——, aged thirty-four, married. Six years ago her first baby was born. She had a difficult labor, and the child was delivered by forceps. Since then she has had two pregnancies, both terminating in abortion, at three and four months respectively, without known cause. Soon after her first labor she had an abscess near the rectum, which broke itself, but which has never healed. It would swell occasionally, and then discharge freely, but has never been free from discharge. For the past eighteen months she has been an invalid, unable to attend to any but the lightest duty. She has had pains in the back, bearing down pains, and persistent leucorrhœa. She is anæmic, has insomnia, and constipation. Examination revealed a severe bilateral lacerated cervix, with the stereotyped condition of metritis, thick, everted lips, and muco-purulent discharge.

On the left side, one and three-quarters inch from the anus, was the hard, contracted orifice of a fistula. A probe inserted into this passed directly into the bowel, about one and one-half inch above the sphincter muscle.

August 12th. Patient was etherized, and the cervix closed as in Case I., by seven silver wire sutures. The fistula was laid freely open on a grooved director, all pyogenic tissue thoroughly and radically cut away, and the

wound evenly and firmly closed by four silver wires, passed deeply below the bottom of the wound, as in Case I. Two silk sutures were passed superficially in the edges of the skin. Wound dressed by iodoform and absorbent cotton, and patient put to bed. Light diet. Bowels kept quiet by tr. opii.

August 19th, the wires were removed, and the wound had healed perfectly by first intention.

Three days after, August 22d, uterine wires were removed; wound healed completely. Bowels moved on the eighth day by hot-water injection. Slight pain. Patient discharged cured.

Case III.—September 3, 1887. Mrs. S. S——, aged twenty six, married. Had one child two years before, none since. Patient is very obese. Has been treated by a homœopath for what he called a patch of eczema near the anus. She can give no history of it, except that she has had it for more than two years. It has discharged almost continually, and has been always very painful. She applied to me for a chafing near the perineum, where the fleshy nates come in contact. She suffered from leucorrhœa, and complained of pain during coition, but was positive she had no uterine trouble.

Examination revealed a severe unilateral lacerated cervix, granular, thickened, and inflamed. A fistulous opening was seen on her right side a little above the level of the anus, and one and one-half inch from it. A probe inserted into this passed directly into the bowel, nearly two inches above the sphincter. Besides this, she had a very large external hemorrhoid running a little way up the raphe.

September 7th, patient was placed under ether, and the cervix closed, as usual, by five silver wires. The fistula was laid open on a grooved director, all unhealthy tissue freely dissected out, and a clean wound made.

The hemorrhoid was ligated and cut off. The large fistula-wound was then closed in the same way as the others, by four silver-wire sutures and three silk sutures, dressed as the others, and the patient put to bed.

Seven days later, September 14th, the wires were removed, and so completely had the wound healed that not a trace of the fistula remained, nor anything to mark where it had been.

September 17th, the uterine wires were removed, and union had taken place here also by first intention. The patient was dismissed well.

Case IV.—December 9th. Mrs. C. M——, aged forty, married, mother of eight children, came to consult me about some difficulty in micturition. During the past year she had had some trouble in passing water, and at times it had dribbled from her, so as to annoy her by chafing. This is all she complained of.

An examination revealed a terrific state of things. Her perineum was lacerated down to the fibres of the sphincter ani muscle. She had a rectocele as large as a good-sized orange; a cystocele about as large as a hen's egg. This was what gave her the urinary trouble she consulted me about. She had a severely bilateral lacerated cervix uteri, which was thickened, granular, and so widely everted that it looked like a horse's mouth. The uterus was beginning to prolapse. Besides all this, she had an ugly looking fistula on the right side, fully two inches from the verge of the anus, and opening into the bowel one inch above the sphincter. From this oozed a thin, sanious, offensive pus. Her general health was greatly impaired, but the duties of a large family compelled her to keep about her house.

December 12th, she submitted to the following operation: Under ether, the cervix uteri was closed in the usual way, by ten silver-wire sutures. The perineal walls or sides were extensively denuded, and six silver wires were passed deeply from one side across to the other, and properly twisted. This closed her perineum, and almost abolished her rectocele and cystocele. A grooved director was then inserted into the orifice of the fistula, and carried up into the bowel and out at the anus. The parts were cut through, and all the fistulous tissue was most radically dissected out, down to perfectly clean, healthy tissue. Several small vessels were tied, as the part was unusually vascular. The wound, which was very large, was closed by five silver wires, deeply passed, as in the other cases, and securely twisted. Wound dressed, and patient put to bed. For three days her urine was drawn with a catheter. Bowels kept quiet by tr. opii, as needed.

Seven days later, December 19th, removed wires from perineum and fistula. Both had healed solidly and perfectly by primary union. Three days after removed cervical wires. Wound completely healed, patient entirely cured.

Case V.—This case was unique, and deserves a place by itself in the archives of gynecology.

The patient, Mrs. C. G——, aged twenty-six, married, came to me on February 28, 1888, for treatment. She was petite in stature, and lamb-like in demeanor. Her four and a half years of marital felicity had been fruitless.

She complained of great nervousness, and pain on coitus.

Examination revealed a fibroid tumor in the cervix uteri, spheroidal in shape, and 1½ inch in its longest diameter by 1¼ inch wide. Its pedicle was attached to the left wall of the uterus, about half an inch above the inner os. The cervix was highly inflamed, patulous, and foul and sloughy.

On the left side of the anus there were three fistulous openings. These formed a triangle, and were two inches from the anal verge. A probe, passed in, showed that two of these fistulous tracts opened by one aperture one inch above the sphincter in the bowel, and the other opened by a separate aperture two inches up the bowel.

Besides all this, there was an obstruction of the rectum 2½ inches from the anus, which proved to be a firm, fibrous diaphragm, or circular shelf, as hard and unyielding as cartilage. It was perforated in the centre by a round opening ⅛ inch in diameter. It could not be dilated in the least. Such an obstruction suggested cancer or syphilis, but a rigid inquiry failed to discover the history of either. It was decided to remove the uterine fibroid at once, which I did by grasping the pedicle with a slender forceps, and carefully twisting it off. This left the cervix uteri widely dilated, like the mouth of a trumpet.

The patient's general health was cared for, and on April 8, 1888, I did the following operation:

Under ether the cervix, which was still widely dilated, was treated like a laceration and closed by seven silver-wire sutures. The three fistulæ were divided on a grooved director, and as the tissue forming the triangle at the openings was infiltrated and diseased, it was completely cut away until a healthy wound was made. This was sufficiently large and deep to admit a hen's egg.

The wound in the bowel was enlarged up to the obstruction. This was cut through its entire thickness on one side. Several twigs of the inferior hemorrhoidal artery were divided and ligated.

The large fistula-wound was then cleansed, and closed with four silver-wire sutures, and one tension suture passed deeply, and held by lead buttons; three superficial silk sutures approximated the edges of the skin, and the whole was carefully dressed with absorbent cotton.

She suffered little or no pain, but her conduct every night for the next four weeks was something to be remembered. She kept quiet during the day, and entertained a host of friends, in spite of all remonstrances; but at night she would roll about the bed, tear off her dressings, kick violently at anybody who went near her, and scream horribly.

A demijohn of sherry and a goblet, and a large basket of assorted fruit, always stood near her bed, of which she partook ravenously. Primary union, or any union of the wound, was impossible under the circumstances. In two days the wound sloughed, and as the wires were bare and were tearing the skin, they were removed. Her bowels, under the influence of the fruit and wine, and her noc-

turnal tirades, moved involuntarily and frequently, with a copious diarrhœa, which, in spite of the nurse's efforts, kept the bed and her person in a constantly soiled condition. She passed her urine in bed; she would take no opiates; she was uncontrollable and fiendish.

This condition of things lasted four weeks, and the wound showed no signs of healing. One day, in a penitent moment (the first she had had), she confessed to a clandestine meeting two years before with an old lover, who left her with a chancre on her vulva. This was followed by a general cutaneous eruption, sore throat, loss of eyebrows, and pains in her bones.

From a fear that her syphilis would return, she was induced to behave, and I gave her potass. iodide, gr. x., three times daily, with a little morphine at night. Under this treatment she began to improve, and by June 1st the wound had healed by granulation. The bowel obstruction slowly became absorbed, and ultimately disappeared.

It will be noticed that in each of the above cases of fistula in ano there was a complication of uterine disease, for which an operation was done in addition to the operation for the fistula. Yet in the first four cases the result was perfect. It is fair to suppose from this that in a case of fistula in ano, without other disease, the operation by suturing would be, in a large percentage of cases, successful; sufficiently so, at least, to satisfy us in attempting it, and saving our patients from the slow and tedious process of healing by granulation.

These cases were not selected. They came in the ordinary course of practice. They were all severe cases, with severe complications, yet four out of five healed by primary union.

Perhaps four cases are not enough to judge correctly of the value of any operation, but they are recorded simply as a contribution to this interesting and important subject.

The fifth case should not, perhaps, have been classed with the other four. The failure was not due to any lack of care in the operation, nor in the after-treatment, but was one of those cases, met with by almost every surgeon, where the patient was absolutely beyond control.

The history of syphilis was concealed before the operation. But the close stricture of the rectum made some interference imperative, and under the circumstances its complete division was the only thing to do, otherwise occlusion of the bowel would have ensued in a very short time. If cases of fistula in ano in the female can be induced to heal by first intention, especially when they are handicapped by uterine complications, it seems to me that simple fistulæ can be made to heal quite as readily by the operation of suturing.

The method of passing the sutures is important. If the suture is entered on one side, and simply passed through the skin and subjacent tissues, and then out at the other, I should expect the operation would fail, although I have never done it in this way. But in the five cases above narrated I entered the suture well back in the skin from the edge of the wound, and carried it below the bottom of the wound, and up and out at a corresponding point on the opposite side. In this way the whole depth of the wound was held firmly together, so that the sides could not move on each other, and thus prevent union. The superficial edges of the skin were held, as above stated, by silk sutures. All the fistulous track itself was radically dissected out, which left a clean, healthy wound. This seemed important, for primary union could not be expected if the firm, hard, glistening, and diseased tissue surrounding the fistula were left in the wound.

If a fistula in ano, either in the male or female, were converted into a healthy wound, closed by proper suturing, and the patient treated as any surgical patient, with a due regard to rigid cleanliness, rest, and diet, it seems reasonable to expect a union by first intention here as anywhere else.

I believe it is important to have the bowels completely emptied before the operation, by copious hot-water injections, and to keep them locked up by sufficient doses of tr. opii until the wires are removed. A disturbance of the wound by an alvine dejection would certainly interfere with primary healing. If perfect quiet of the parts is maintained by an empty bowel, opium as needed, rest, and a light diet, we have done all that it is possible to do to insure for our patients a speedy recovery.

747 Madison Avenue, March 28, 1889.

Clinical Department.

A UNIQUE NON-CAPSULATED FATTY TUMOR OF THE NECK—REMOVAL, WITH LIGATION OF ALL THE JUGULAR VEINS EXCEPT THE LEFT INTERNAL—RECOVERY.

By PAYSON T. HUCKINS, M.D.,

Los Angeles, Cal.

Mr. H——, aged thirty-five, laborer, of good general health, consulted Dr. K. D. Wise, of this city, in the spring of 1884, for an enlargement encircling the whole circumference of the neck, extending anteriorly from the inferior maxillary bone to the sternum and clavicles, posteriorly from the occipital protuberance and around the occipital bone as far as the seventh cervical vertebra, and to the superior angle of the scapulæ.

The history of the patient evolved the fact that six years previous he had noticed a small soft lump under the body of the inferior maxillary on either side, within a short distance of the symphysis, and that these lumps had gradually extended and involved the whole neck. This enlargement was seriously interfering not only with the patient's looks but his comfort, the circumference of the neck being much greater than that of the head. The neck measured before the operation twenty-five inches, and after the removal of the tumor thirteen and one-half inches. The circulation was greatly impeded in the capillaries of the skin over the tumor and face, giving the patient the appearance of a brandy drinker. His comfort was greatly impaired by the pressure of the fatty mass interfering not only with the circulation but with deglutition, and under active exercise with respiration.

There was no strumous or syphilitic history.

Dr. Wise, after consulting with Dr. Huckins, decided to remove the tumor, and after a few weeks of preliminary treatment the patient was etherized by Dr. R. C. Kirkpatrick, and Dr. Wise, assisted by Dr. W. W. Ross and Dr. Huckins, began the operation by making a curvilinear incision on the left side, extending from a line two and one-half inches below the mastoid process of the temporal bone to about the same distance below the symphysis of the maxillary bone, dividing the sterno-cleido-mastoid muscle; but, finding the tumor was not capsulated, a crucial incision was made from the angle of the inferior maxillary to the sterno-clavicular articulation. The process of dissection was then begun, and after two hours of tedious work, severing attachments from all the deep-seated vessels, nerves, muscles, and aponeuroses, ligating blood-vessels, checking hemorrhage by hot water and pressure, one-fourth of the tumor was removed piecemeal. The operation was thoroughly antiseptic, the incisions being united by carbolized silk sutures, drainage-tubes inserted, and the patient kept in bed for two weeks. The incisions united by first intention.

The second operation, performed six weeks after the first, consisted in making a straight incision from two inches back of the mastoid process downward to the clavicle, and from the beginning of this incision backward to the nucha. After about two hours of wearisome dissection, removing a piece not larger than a walnut at any one time, this portion of the neck was dressed as in the preceding. The greatest difficulty in this part of the operation was to sever the deep fibrous attachments, some of which extended to the transverse and spinous processes of the cervical vertebræ. The patient made a rapid recovery

from this operation, the wound healing kindly, and in four weeks he was again anæsthetized, and the operation was begun on the right antero-lateral side. The incisions were made as in the first operation, all went well until this mass was about half removed, when the internal jugular vein was injured just below the point of bifurcation of the common carotid artery, and a full expiration sent a gush of blood over the patient. Dr. Wise instantly grasped the vein between the thumb and forefinger of the right hand, and thus prevented an undue loss of blood and the entrance of air into the vein. Rapid cyanosis followed, and for a time it seemed as though the patient would not rally; but proper treatment soon restored the circulation, and Dr. Huckins enlarging the rent in the common sheath of the vein, artery, and nerve, and isolating the vein, applied a carbolized catgut ligature to both proximal and distal ends. The operation was finished in about three hours. The patient, being very tractable, was kept absolutely quiet, and had nothing to eat or drink for seven days except a tablespoonful of equal parts of milk and water every hour. He made a rapid recovery, not having an untoward symptom. At the end of two months the remaining fourth of the tumor was removed in the same manner as in the second operation.

About five years have elapsed, and the patient is now in perfect health. He has never complained of any fulness in the head, or any headache, and there is no evidence of any recurrence of the growth. I would emphasize the fact that all of the jugular veins were ligated except the internal on the left side, and still the patient suffered from no impediment to the circulation, which I think was in a measure due to the almost starvation diet, as well as to the necessary division of the operation into four periods, which gave ample time for the establishment of the collateral circulation.

Lipomatous or fatty tumors usually have a distinct fibrous covering or capsule which is supposed to be derived from the connective tissue of the parts occupied by the growth, and in a measure depends upon the amount of loose connective tissue in the region of the growth. There are also distinct fibrous prolongations dipping into the fatty mass and separating it into lobes, lobules, and granules, and forming attachments to the vessels, muscles, fascia, and bony prominences.

The tumor in question had no connective tissue or capsule surrounding it, and yet it had all the microscopical appearances and other characteristics of a fatty growth, and not that of normal adipose tissue; but there were fibrous bands dividing and subdividing the mass, and forming firm attachments to the vessels, muscles, and bony processes. It would not have been unusual to find a very attenuated capsule or no capsule in the back of the neck, for there is very little connective tissue there; but in this case there was no capsule over any part of the tumor, and furthermore, there was no connective tissue, the lipomatous tissue adhering closely to the skin and muscles, and had to be peeled off with the fingers and handle of the scalpel. When the skin was laid over the seat of the operation and sutured, there was great fear of sloughing.

I would state that the skin after the operation adhered to the muscles and vessels, but has become loose since, probably by the formation of normal cellular tissue. I will also state that the diagnosis of lipoma was made before the operation.

A LAPARO-MYOMOTOMY.

By DEWITT G. WILCOX, M D.,

BUFFALO, N. Y.

It is Dr. Abbe who suggests that it should be a surgical axiom that every case of operative interference should be published. Acting upon that suggestion I present the following merely as a contribution to a subject of which we read much, but which as yet is not made perfect.

The patient, being an intelligent, observing woman above the average, was able to give me a very comprehensive history of her sufferings, which I append very nearly in her own words. It is interesting as showing the behavior of fibroid tumors under varying circumstances: "About six years ago," says the patient, Mrs. K——, who is fifty years of age, "I took two Fresh Air Children from New York to enable them to enjoy a respite from that heated city, and obtain the fresh air of the country. I rocked and lifted them more than I realized. The next day I felt sore across my abdomen, and putting my hand there felt a hard tender ridge extending upward nearly to the navel. After six weeks, during which time it did not abate, I sent for my physician, Dr. Truman, of Belmont, who then diagnosed a uterine fibroid. It seemed to be club-shaped, and the upper end was free and easily movable. He prescribed local and constitutional treatment, which was followed for two years, with an abatement of all acute symptoms. Then I had an attack of gastritis and could retain no food for eight days. At this period I was examined by another physician, and my bowels being emptied, he had a better opportunity of making an examination. He found the same club-shaped tumor freely movable under the skin. Soon after I had much backache, and could be upon my feet but a few hours at a time, had also a constant bearing-down pain with nausea. A year later I had a second attack of dysentery, which reduced me greatly. The backache and bearing-down increased, and in addition there was a fulness and tenderness in the vagina not before noticed. I had had great difficulty for years in obtaining a passage from the bowels without an enema. In October, 1888, the distress became so severe that I would frequently faint during an evacuation. In December last another examination was made, when the tumor, which heretofore was easily felt beneath the abdominal walls, could not be found, nor any trace of it. I had not had an examination made previous to that for some time, and had not noticed its disappearance." This is in substance her history.

When I examined her, January 28, 1889, I found, per vaginam, a hard, resisting body in the posterior cul-de-sac, filling up the hollow of the sacrum and firmly adherent. I could not lift it at all from its position; the rectum seemed almost if not quite occluded. The cervix and os were normal, nothing definite could be obtained by bimanual examination. I diagnosed a subperitoneal uterine fibroid on the posterior surface of the uterus causing a retroflexion of that organ and thereby allowing both the tumor and the fundus uteri to fall into the hollow of the sacrum. The diagnosis was quite in accord with that afterward given me by the family physician, Dr. Truman. The dangers were complete occlusion of the rectum, which was gradually taking place, exhaustion from pain, and lack of assimilation. At her urgent request the operation was undertaken, the bowels were as thoroughly emptied as possible, and the belly was shaved and scrubbed. An incision was made in the median line, and the hand being inserted, a retroverted fundus was felt, and the fibroid back of it, beneath the peritoneum, firmly bound down to the rectum. There was also on the fundus a small pedunculated fibroid, about the size of a walnut, and hysterectomy was impracticable from the firm attachment of the uterus to the rectum through the tumor, also from contractions of the broad ligaments rendering it almost immovable. Enucleation was decided upon. First, the small pedunculated fibroid was removed by transfixing the pedicle and firmly ligating it, cutting off the tumor and then stitching the peritoneum over the stump. An incision was then made anteroposteriorly, extending from the fundus uteri back to the rectum, just through the peritoneum. Two fingers being inserted between this membrane and the fibroid, this separation was carried on until the tumor could be raised above the fundus; it was found to be "double-headed," a constriction in the middle making it appear bifid. Some of its attachments to the uterus were torn off in separating the peritoneum, so that the remaining pedicle

was not much larger than a child's wrist. As soon as it could be raised from its bed the pedicle was transfixed and firmly ligated with braided silk wound three times around, then the pedicle was ligated *en masse.* the fibroid cut off, and the stump stitched over with peritoneum. After washing out the cavity there was observed to be some hemorrhage. Seizing the fundus with the volsellum and bringing it forward, and passing a small incandescent electric light into the cavity, it was found that the oozing came from the posterior surface of the fundus, and not at all from the stump. There was an area of about one square inch that bled quite freely. The abdominal cavity was freely flooded with hot water in the hopes to check it, but was of no avail. Clamp forceps could not catch the bleeding points, as they were too general—not at all defined. Again the fundus was raised up by the volsellum, the light introduced, and the peritoneum brought from the two sides and stitched over the bleeding surface This seemed to check the hemorrhage. The cavity was again washed out, a glass drainage-tube was inserted in the lower angle of the wound, and the peritoneum and the fascia were sewed separately. Twenty-four hours afterward the dressings, which were saturated with blood, were changed. At the end of thirty-six hours the tube was removed. It was found filled with a partially organized clot, which came away with the tube. Iodoform gauze was then inserted as drainage, and the patient made a good recovery, from that time on having no elevation of temperature and but little nausea. The dressing was not changed again for five days, except the drainage, which was continued two days longer. The incision healed by first intention, and the drainage opening granulated soon after. The patient had movements of the bowels at the end of four days, and has had easy movements since, has no backache and is able to walk comfortably.

Progress of Medical Science.

THE ETIOLOGY OF RHEUMATIC FEVER.—Dr. Pel, of Amsterdam, has written instructively on this subject. Although no specific germ of infection has as yet been found (*British Medical Journal*), there is reason to suspect the existence of such a germ, and for looking upon acute rheumatism as an infectious disease. For example, it is liable to occur in epidemics, which not uncommonly bear distinctive characters. The disease commences with a disturbance of the general health, accompanied by fever, the joint affections only declaring themselves subsequently; and it is frequently complicated by inflammations of the endocardium, pericardium, and other serous membranes, which of itself is presumptive of the infectious character of the disease; but confirmatory evidence of the discovery of a specific micro-organism in the inflamed membranes is still required. Much of the more recent literature of the subject points decidedly toward the disease having a specific origin. In the Amsterdam Hospital it is found that rheumatic fever often attacks patients in batches, and "rheumatism days" are spoken of, when this occurs in a marked degree. During April, May, and June, 1884, the cases were mild as regards the joint affection, but nine of them were complicated by affections of the serous membranes. All, however, were convalescent in three weeks. In August and September, 1884, the cases were slight, but there were repeated relapses of the joint affection, also anæmia and functional cardiac murmurs. In February and March, 1884, the cases were complicated by pleurisy, pericarditis, endocarditis, etc.

In August, 1885, an instructive case occurred of a female patient, aged forty-three, who, after recovering from enteric fever, followed by double pneumonia, while able to walk about was suddenly seized with symptoms of acute rheumatism, and passed through a somewhat sharp attack. She had never had any rheumatic symptoms previously, and while in hospital was removed from damp, etc. She, however, occupied a bed between two other patients with rheumatic fever, and her attack coincided in point of time with a relapse in five other rheumatic-fever patients. Other cases pointing to direct infection are quoted from Salisbury, Pocock, Schäfer, and Thoresen. Professor Pel then proceeds to discuss the relationship of rheumatic fever to climatic conditions and to malaria. He is inclined to agree with Bertholon in regard to there being a distinct connection between malaria and rheumatism, the years when malaria is prevalent in Amsterdam being remarkably free from rheumatism. The papers of Gabbet and Edlefsen, on the relation of acute rheumatism to temperature and rainfall, are quoted by the author, who states that on comparing the hospital registers with official meteorological tables, it was found that the so-called rheumatism days did not occur during a lengthened period of excessively rainy weather, that the actual temperature had apparently less influence than the extent of the diurnal variation, also that some five to ten days previously to a "rheumatism day" a great quantity of rain had generally fallen. There is evidently, therefore, some connection between the amount of rainfall and rheumatism, and the author's observations point apparently to the development of the specific *materies morbi*, whatever it may be, in the earth by moisture and its subsequent dissemination during dry weather.

β-NAPHTHOL IN TYPHOID FEVER.—Dr. J. M. Clarke states that β-naphthol is a substance very insoluble and having at the same time sustained and powerful antiseptic properties. Moreover, it is only toxic in large doses—about 250 grammes in the twenty-four hours for an adult of average weight—while forty grains, or 2½ grammes, distributed over the twenty-four hours are sufficient to keep the intestinal contents aseptic. But while giving naphthol it is also advisable to control the pyrexia that necessarily occurs in the course of enteric fever, and so to prevent the damaging effects on the tissues and organs of the body of a long-continued high temperature; we should therefore, together with naphthol, administer an antipyretic, preferably, perhaps, antifebrin or phenacetin, whenever the temperature rises beyond a certain height, say 102° F. With regard to the best form of administering naphthol, it was given suspended in milk, and a small quanity of pure milk was taken after the dose. The doses must be administered frequently, in order to keep a constant effect, and small doses have also the advantage of not giving rise to the pungent after taste in the throat that naphthol is apt to produce. To adults it may be administered in gelatine capsules, or the following formula, which seems the most satisfactory after several trials, may be made use of; ℞. β-naphthol, gr. xx.; tr. aurantii, ʒ ij.; syr. limonis, ʒ ss.; mucilaginis tragacanthi, ʒ iij.; aq., ad ʒ vj. Dose, ʒ j. Dr. Clarke formulates these conclusions: 1. The production of intestinal antisepsis is a rational mode of treatment of enteric fever, and that β-naphthol is a safe and tolerably efficient agent for this end. 2. By its use (in his cases) the duration of the disease was shortened, and the intensity of the symptoms directly arising from profound disturbance in the alimentary canal was lessened. 3. The tendency to the occurrence of splenic enlargement, albuminuria, and of secondary complications such as boils, abscesses, etc., of purlent infective origin, is diminished. 4. Complete convalescence is more speedily and satisfactorily attained: and there is less risk of a propagation of the disease to others. Finally, we must bear in mind that in some patients naphthol may excite so much gastric disturbance as to prevent its use.—*The Practitioner.*

THE ELASTIC LIGATURE AS A SUBSTITUTE FOR VENESECTION.—Dr. Walford writes, in the *British Medical Journal*, that he has used the elastic ligature applied to the limbs, as a substitute for venesection in pulmonary congestion, hæmoptysis, carditis, etc., for over twenty years, and values it highly.

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AN ALLEGED HÆMATOZOON OF RELAPSING FEVER.

IN a communication presented at a meeting of the Medical Society of the Caucasus, in Tiflis (*Protokol Zasyedania* of December 16, 1888), Dr. N. A. Sakharoff described a parasite, found by him in the blood of patients suffering from relapsing fever, which resembles in many respects the hæmatozoon malariæ. The subjects of his study were six patients, received into the railway hospital in Tiflis from different parts of the Caucasus. In none of them could any history of contagion be obtained, but the diagnosis of relapsing fever was made from the presence in the blood during the stage of fever of Obermeier's spirochætæ.

On examining the blood of these patients soon after the beginning of defervescence, the author found numerous protoplasmic bodies of a dull whitish color and faint outline, varying in size, but usually much larger than the hæmatozoon malariæ; some being even as much as twenty times the size of a red blood-corpuscle. In several of these were found nuclei of a light gray color, and about the size of a red blood-corpuscle. In addition to the nucleus, each organism contained numbers of granules, some dark and some of a bright red color. Some of these granules were at rest, while others presented a rapid to-and-fro movement. On watching these bodies they were seen to possess amœboid properties, sending out prolongations of protoplasm from one or the other side. Sometimes these arms would be drawn back into the body of the corpuscle, at other times they would become constricted at one point and separate from the parent mass. In this way, at times, the entire mass of protoplasm becomes divided up, and the newly formed corpuscles separate from each other, leaving only the nucleus and the pigment granules, which then float free in the blood. The nucleus resembles a red blood-corpuscle; but whether it is one or not, the author is not prepared to say, although the fact that it is not visible in stained preparations leads him to think that it may be of such a nature.

In addition to these large masses there are other small amœboid bodies which Dr. Sakharoff describes as entering the red blood-corpuscles and giving rise to appearances similar to those seen in the blood of malarial subjects. These may be seen in great numbers in blood drawn directly from the spleen in the stage of apyrexia. These bodies increase in size at the expense of the blood-corpuscles, become filled with pigment granules, and finally assume the form and appearance of the large masses first described.

The origin of the spirochæte of Obermeier is also described by Dr. Sakharoff. In the blood may be seen a number of grayish bodies, possibly the nuclei above mentioned, which have been freed by the disappearance of the surrounding protoplasm, or possibly independent protoplasmic bodies, from which rays project at different points, giving them a star-like appearance. The author isolated one of these bodies in some blood taken from a patient eight hours before the occurrence of a fresh febrile paroxysm, and watched it for the space of about ten hours. It had three short rays or flagella projecting from its surface, and these had a very rapid oscillating movement. In the course of an hour these rays were seen to increase in length, one being considerably larger than the others. This one continued to grow at the expense of one of the others, which became smaller and smaller until it was finally entirely withdrawn. There were now but two rays, one larger than the other, inclined to each other at an obtuse angle. This angle finally disappeared, and in the course of ten hours the body had became transformed into a long thread, thicker than a normal spirochæte, and having a slow, wave-like motion. The author believes that he witnessed here the formation of the so-called spirochæte of Obermeier, attributing the greater thickness of the thread and its sluggish movement to the circumstances under which it was developed outside of the body and at the ordinary temperature of the room.

Dr. Sakharoff notes particularly the resemblance of this parasite to that found in malarial fever, and thinks that the points of similarity in the clinical picture of the two affections are thereby explained. Those are the protoplasmic bodies within the red blood-corpuscles, which, after a time, are seen to contain pigment granules. There are also the large bodies containing pigment granules. These are, however, much longer than the similar bodies seen in malarial blood, and are also endowed with amœboid movements, which the latter do not possess, and have possibly, though not certainly, a nucleus. Then segmentation of those large masses takes place. The rayed bodies from which the spirochætæ are developed are possibly similar to the flagellated bodies observed in malarial blood, and the spirochætæ may be the analogue of the free flagella.

Had not Laveran's discovery been shown, over and over again, by the most competent observers, to be true, these observations of Sakharoff would be in the highest degree improbable, and would scarcely seem worthy even of passing mention. As it is, they need the confirmation of other authorities before they can hope to gain evidence. It is not impossible that the author may have erred in his diagnosis, and that his patients were suffering simply from malarial infection, although he claims to have found Obermeier's spirochætæ during the febrile paroxysm in every case. On the other hand, it should be remembered that other observers have seen appearances similar to those described by Sakharoff, in cases of relapsing fever. Heidenreich found protoplasmic bodies resembling white blood-corpuscles, but larger, some of which were apparently nucleated, some homogeneous. Those containing granules he took to be fatty degenerated white corpuscles, although the addition of fat dissolving substances failed

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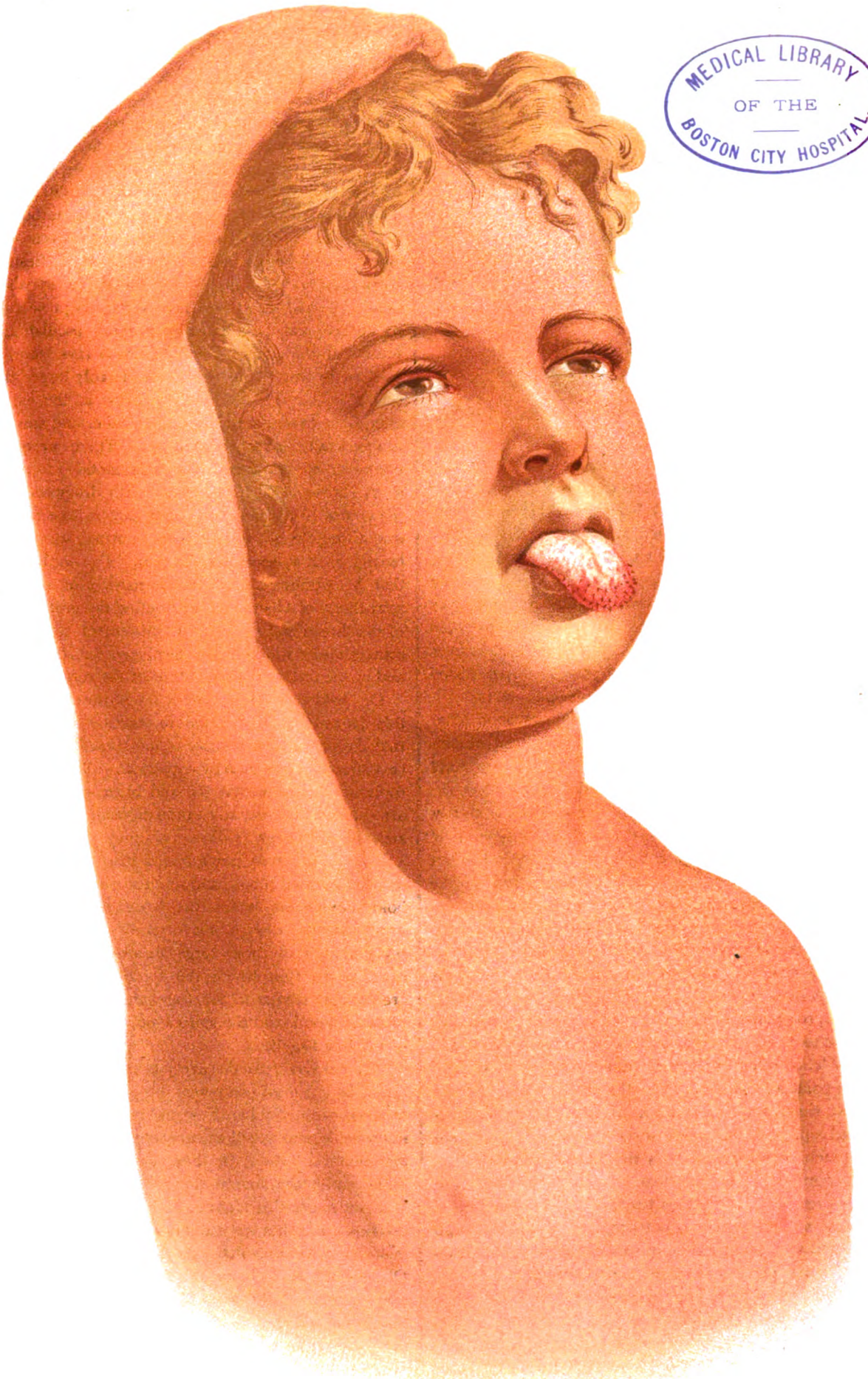

SCARLATINA – SCARLET FEVER.

From Dr. P. A. Morrow's Atlas of Venereal and Skin Diseases.

WILLIAM WOOD & COMPANY, Publishers, NEW YORK

to remove the granules. Gutmann saw numerous minute scintillating bodies, similar to those supposed by Sakharoff to be pigment granules, which he thought were the spores of the spirochætæ. Albrecht possibly saw the bodies from which the author believes the spirochætæ are developed; but, as he was searching for spores, seems to have attached but little importance to what he actually did see.

The following are the conclusions which Dr. Sakharoff formulates as a result of his investigations:

1. In every stage of relapsing fever there exists in the blood a hæmatozoon, in one or the other phase of its development.

2. Relapsing fever may be diagnosticated even in the apyretic period (most readily by the aid of stained preparations).

3. Judging from the morphological resemblance between the parasites of malaria and of relapsing fever, we may conclude that the latter, like malaria, may also arise from the soil (miasmatic), an assumption which is strengthened by the author's observations of sporadic cases of relapsing fever.

4. By the resemblance of the parasites to each other is explained also the resemblance of the symptoms of the two diseases, in consequence of which the affections have been, and still are, occasionally mistaken the one for the other.

5. The spirochætæ of relapsing fever ought to be excluded from the family of spirochætæ (schizomycetes) and be called pseudo-spirilla.

THE QUESTION OF CONTAGION IN CANCER.

NOTWITHSTANDING the very unsatisfactory nature of the evidence which has been brought forward in support of the contagiousness of cancer there are not a few who hold to this view. Several have claimed to have discovered a pathogenic micro-organism of the disease but none of these discoverers has had the satisfaction of finding his results confirmed by other investigators. Inoculation experiments upon animals with cancer-juice and with cultures of the micro-organisms have also failed to give results which can in any sense be regarded as conclusive. Inoculation upon the human subject has been tried in two instances at least, and has apparently succeeded. The first case was that of Alibert who derided the theory of contagion, and to show his belief in its falsity he inocu lated himself with cancer-juice, and subsequently died of carcinoma. The second case was one reported by Hahn, who inoculated the healthy breast with cancerous material taken from a tumor of the other breast. At the woman's death a cancerous growth was found at the site of inoculation.

In *La Normandie Médicale*, of February 1, 1889, Dr. Arnaudet relates his experience with cancer in the hamlet of Saint-Sylvestre-de-Cormeilles, which he regards as conclusive proof of the contagious nature of the disease. In this place, out of a population of not quite four hundred souls, there were seventy-four deaths in a period of eight years, and of these eleven were from cancer. This is certainly a large number, and, in proportion to the population, is over three times greater than the mortality from the disease in Paris. In the neighboring villages of Normandy, although exact figures are wanting, the death-rate from carcinoma is said to be nearly the same. Of these eleven cases six occurred within a limited area and the order of their occurrence was such as to suggest a possible connection between them. The first case was that of a man living in an elevated portion of the hamlet, the next case was a man living on the side of the hill below the first, then three cases occurred almost simultaneously in persons living close together in the valley at the foot of this hill, and the sixth patient was a near neighbor of the first on the plateau above the valley. In none of these cases could any history of heredity be obtained, and they were all free from the reproach of alcoholic addiction. In five of the cases the cancer was seated in the stomach, and in the sixth the location of the disease was in the neck.

Dr. Arnaudet believed that the germ of the disease, microbial in its nature, was carried in the water. None of the patients drank water, but they were all moderate consumers of cider and that was the beverage that the author accused of being the carrier of the contagion. In making cider the inhabitants of that region added water taken from the swampy ground, and the darker the color of the water, consequently the more impure, the higher it was esteemed as a diluent of the apple-juice.

Dr. Arnaudet's cases are hardly as conclusive as he seems to regard them, but they may serve as a contribution to the subject, and we give them for what they are worth, leaving to the contagionists the satisfaction of using them in support of their views, if they see fit to do so.

THE QUESTION OF FEBRILE ALBUMINURIA IN CHILDHOOD.

FEVER is frequently accompanied by the appearance of albumin in the urine. The precise mode of origin of pyrexial albuminuria, which, it must be remembered, is not an invariable symptom, has not yet been satisfactorily established. Nor can it be said that its prognostic significance is at all clear, some observers denying its importance altogether, while others have sought to claim for it a more or less serious meaning.

Some phases of this subject have been recently studied by Ekkert, and in the *Archives of Pediatrics* a *résumé* of the results of his observations has appeared. The author has endeavored to throw further light on the question of the relationship of different diseases to changes observable in the urine of children. And he has further tried to determine, at least approximately, the loss of albumin to the organism in connection with the albuminuria of fever. The material included one hundred hospital cases, of which thirty-one were cases of acute infectious disease, seven being cases of petechial typhus, nineteen of typhoid, two of recurrent, and two of intermittent fever. The urine was examined as to its daily quantity, color, specific gravity, the quantity of its phosphates and its albumin, if any. The albuminuria continued two or three weeks in one case of petechial typhus and in three cases of typhoid; from one to one and one-half weeks in four cases of petechial typhus and three of typhoid; during several days albumin was found in six cases of typhoid, and during one day in two cases of typhoid.

The author believes that he is justified in making the following statements:

1. Albuminuria in typhus and typhoid fevers is a very common phenomenon, occurring in three-fourths of all children who have these diseases.

2. Albuminuria occurs most commonly during the first week, or even during the first days of the disease.

3. It is difficult to define the normal duration of albuminuria; it probably averages one to one and one-half week.

4. The frequency of albuminuria in typhus and typhoid, and the quantity of albumin discharged bear close relation to the intensity of the febrile condition and the duration of the period and fever.

A certain number of cases of acute exanthematous diseases were also studied with reference to the relation of albuminuria to them, these being diseases in which the kidneys are most likely to be implicated, especially when they occur among children. Of the group of cases studied two were measles, two of diphtheria, and fourteen of scarlet fever, with secondary parenchymatous nephritis in different stages of development. The conclusion concerning these diseases was that the occurrence of acute eruptions is usually attended by febrile albuminuria, the intensity and duration of which depend entirely upon the intensity and duration of the accompanying fever. The albuminuria is generally of brief duration, and has no particular prognostic significance. In the third or fourth week after scarlet fever a kidney affection usually appears, without œdema or general disturbance, but with albumin, which gradually increases to a maximum and then as gradually diminishes until it disappears. Fever is likely to be present when the albumin first appears. The prognosis depends upon the degree to which the kidneys are implicated.

It can hardly be claimed for Dr. Ekkert's observations that they have solved any of the problems connected with the subject of febrile albuminuria, but as a clinical contribution to it they deserve attention. Renal congestion may so quickly lead to true nephritis, that albuminuria in fevers, or after them, should not be overlooked by the physician.

A FEVER FERMENT.

THE apostles of hot water and meat therapeutics have always made a great deal out of the yeast plant, and, in fact, based most of their pathology upon yeast and its products.

There has recently arisen a prophet of yeast in Paris by the name of M. Roussy, chief of the laboratory of the Faculty of Medicine of Paris. He has presented to the Académie de Médecine a memoir on the pathogeny of fever and the rôle played therein by the diastases or soluble ferments. M. Roussy found that sour beer and other fluids containing yeast often caused an intense fever. He found by experiment that the yeast cells produced a soluble ferment or diastase, having very powerful pyrogenetic properties. One substance in particular, which he has isolated and found to be composed of homogeneous granulations that "some tenths of a milligramme per kilogramme of animal" will induce a high fever; calls "pyretogenine." It is white, granular, homogeneous, feebly volatile, having an odor of yeast. It is hygroscopic, very soluble in water, but insoluble in alcohol. Chemically, it is an organic nitrogenized body. It has powerful properties as a diastatic ferment, turning starch into sugar, like "invertine." This latter substance, however, has no pyrotogeneous properties. M. Roussy is of opinion that this pyrotogeneous ferment which he has discovered plays a very important part in producing fevers of various kinds.

THE PROPOSED AGNEW MEMORIAL FUND.

No one was more earnest or successful in promoting the welfare of the Manhattan Eye and Ear Hospital than the late Dr. C. R. Agnew. The plan that has recently been devised, therefore, by the directors of that institution to raise a memorial fund, will, we feel sure, be universally regarded as appropriate and wise. This fund is to be used in paying the running expenses, and thus increase the usefulness of the hospital. The directors assert confidently their belief that there are many of the late Dr. Agnew's friends who will gladly contribute to this fund, to mark their sense of his own generous nature, and to aid an institution which he founded and cherished with self-denying care. It is hoped that a sum of $100,000 may be secured. It was, we are told, for many years the anxious wish of Dr. Agnew that the hospital should, for its own protection, and as a means of extension in the future, purchase the property immediately in its rear, now used as a livery stable, and which is liable to become very objectionable and detrimental to the health of the inmates of the hospital. The directors suggest that small subscriptions will be acceptable, as well as large, and that all payments can be made to suit the convenience of subscribers. We take pleasure in calling attention to the plan thus proposed, and trust that it will meet with the complete success which it deserves.

THE TOLERANCE OF IODIDES AS A DIAGNOSTIC SYMPTOM OF SYPHILIS.

A DISCUSSION has arisen between Dr. H. C. Wood and Dr. J. William White as to the fact of a special tolerance of iodides in syphilis and its diagnostic value. Dr. Wood stated that: "In all cases of doubtful diagnosis (of cerebral syphilis) the so-called therapeutic test should be employed, and if sixty grains of iodide of potassium per day fail to produce iodism, for all practical purposes the person may be considered to be a syphilitic."

From this view Dr. White dissents, and to obtain support or otherwise for his position, he has secured the opinions of a number of eminent syphilographers and general practitioners, including Professors James Stewart, James Nevins Hyde, F. N. Otis, F. R. Sturgis, McCall Anderson, E. L. Keyes, Roswell Park, R. W. Taylor, William Osler, and Drs. John P. Bryson, John B. Chapin, and E. N. Brush.

Their letters, published in *The Therapeutic Gazette* of March, 1889, represent an enormous experience in the administration of the iodides, and ought, we should say, to settle the question. Without an exception the tone of the letters is decidedly against the position taken by Dr. Wood. While some admit that in tertiary syphilis patients, as a rule, stand large doses of iodides very well, the exceptions to this rule are too numerous to make it of any diagnostic value. The general opinion seems to be that tolerance of iodides is a matter of personal idiosyncrasy, and is not modified by syphilis.

In commenting upon the letters, Dr. Wood modifies somewhat the statement we have first quoted, and says that in advanced syphilis iodide of potassium is usually tolerated much more freely than in health, and that this rule or coincidence is of sufficiently wide application to be of value in prognostication and treatment.

In the light of the evidence collected, even this proposition appears to be insufficiently supported.

A FURTHER CONTRIBUTION TO THE SUBJECT OF URÆMIA.

No subject has greater practical importance or profounder scientific interest than that connected with the pathology of urinary secretion, and more particularly that connected with the results of perturbed action of the kidneys in uræmia. We have described already the striking conclusions regarding the cause of uræmia reached by Feltz and Ritter, and by Bouchard and others of the French school. These latter results have seemed almost too precise and brilliant to be true; and as yet no positive support to their views has been made. It seems likely, however, that we will soon be reaching certainty in this line of research.

It may be remembered that a good while ago Voit called attention to the poisonous properties of the potassium salts, and thought that they might have much to do with the causation of uræmic symptoms. Voit also showed that the other constituents of the urine, though of themselves harmless in animals with healthy kidneys, could produce poisonous effects when accumulated in the body, by lessening tissue-metabolism.

In 1881 Feltz and Ritter, and during the same year, independently, Astachewsky, showed that the inorganic constituents of urine, especially the potash salts, were very poisonous. These investigators also showed that neither urea nor kreatinin caused uræmic symptoms, while the potash salts did do so. However, other experimenters soon asserted that the organic constituents of urine, as a whole, did have some toxic effect. Schiffer found that after removal of the salts one to one and a half litre of urine would kill a rabbit with spasmodic and paralytic symptoms. Bouchard found that from forty to sixty centimetres of normal urine per kilo was sufficient to kill an animal. The potash salts, he thought, caused about one-third to one-fifth of this effect (Stadthagen, *Zeitsch. für Klin. Med.*, 1889, p. 385), or, as he now says, one-fortieth part (*British Medical Journal*, 1889, p. 613). The larger part depends upon organic poisons, of which he finds no less than five.

Lepine (*Rev. de Médecine*, 1885, p. 415) comes, however, to the rescue of the potash salts. From his experiments he concludes that eighty-five per cent. of the poisonous action of urine is due to these substances.

Febrile urine he found to be more than twice as poisonous as afebrile urine—twenty-five centimetres per kilo of animal as against sixty; while the salts were relatively less toxic—forty per cent. against eighty-five per cent.

M. Stadthagen, in the *Zeitschrift f. Klin. Medicin*, Bd. xv., Hft. 5, 6, p. 387, reports the result of a fresh study of this question, following up the work of his deceased friend Dr. Schiffer. In general, Stadthagen confirms the views of Lepine regarding the toxicity of the potash salts. Furthermore, he does not think it necessary to assume the existence of any ferments or ptomaïnes, such as Bouchard discovers, in order to explain the phenomena of uræmia. These are sufficiently accounted for by the potash salts and the effect upon the system of a retention of the urea, uric acid, kreatin, etc. These nitrogeneous ingredients of the urine, while not poisonous of themselves with healthy kidneys, act as poisons when not excreted, by dampening, as it were, the processes of nutrition.

The unanimity in the results of Voit, Feltz and Ritter, Astachewsky, Lepine, and Stadthagen is sufficient to establish as a settled fact the dominant importance of the potash salts in the causation of uræmia. It seems reasonable to suppose also, with Voit and Stadthagen, that there is sufficient power of toxic action in the known organic constituents of the urine to explain the remaining phenomena of uræmic toxæmia, and for the present, at least, we can dismiss the claims of Bouchard and his five organic poisons.

A NOVEL TREATMENT OF TUBERCULOSIS.

In the case of a disease so intractable as tuberculosis it is natural enough that many and diverse methods of treatment should have been proposed, since none of those that have gone before have been shown to exert any true specific action, although some have been of undoubted utility. One of the latest of these methods, and certainly one of the most startling in its originality, is that proposed, and actually carried out in three instances, by Dr. Lanigan, of Hyde Park, Mass. This method, which is described in the *Therapeutic Gazette* for February, 1889, consists in the attempt to substitute one cachexia for another. It is, of course, only a modification of bacteriotherapy, but its peculiarity lies in the manner in which the substitution is attempted.

Dr. Lanigan says that he has for many years held a belief in the antagonism between certain cachexias. Observing that there were inherited traits of character that were diametrically opposed by others, he set about ascertaining whether there were not also antagonistic inherited cachexias, the presence of one of which would preclude the existence of the other. He believes that he has discovered such antagonism in the case of phthisis and rheumatism, for of a considerable number of cases of the former disease, in which inquiries were made in this direction, he was unable to discover a single instance in which phthisis and rheumatism had ever attacked the same individual simultaneously or consecutively. He had also observed that rheumatics were always blessed with healthy lungs.

Thinking over this apparent antagonism of cachexias, Dr. Lanigan concluded to try the effect of turning a consumptive into a rheumatic. This was accomplished by transfusion of blood taken from a patient suffering from acute rheumatism. In one case he made two injections, each of four ounces, and in a second case a single injection, of six ounces. In both instances the recipients of the blood were attacked with rheumatism within a week. In a third case, in which a single transfusion of eight ounces was made, there was a transient rise of temperature to 104° F., but no pain was experienced in the joints. All three patients improved, the temperature fell, the pulse became normal, and they increased in weight; and there is now every prospect, the author thinks, that they will continue to do well, for they are gaining strength,

have a good appetite, and seem to be on the high road to recovery.

This is satisfactory as far as it goes, but it does not go very far. The report was prepared, apparently, but a short time after the experiments were made, and the assurance of continued improvement rests only upon the hopes of the operator. Dr. Lanigan, furthermore, says nothing about the physical signs, and but little beyond what we have quoted concerning the general symptoms. The author says, however, that he will answer any questions as to this method of treatment which may be asked of him, and those desiring information concerning these missing details may obtain it by addressing him.

THE COUNTER-PRESCRIBING EVIL.

THE recent arrest of one or two druggists for usurping the functions of the physician has shown that this evil is not yet dead, and the circumstances attending these particular cases have shown no advance in the solution of the problem. The crusade has been too short-lived and spasmodic to do any good. Such instances of prosecution, occurring at irregular times, bear on them the evidences of some particular spite, rather than anything else.

The counter-prescribing practice has certain elements of permanency which we may as well recognize. In the first place is its universality. Go up and down the avenues of this city, and how many drug-stores are there in which it is not more or less done? A few, a very few on the main avenues are exceptions to this rule. In the vast majority a customer, unless he is apparently very ill, can describe his symptoms and receive therefor some medicine prepared by the druggist or sold by him in bulk. It is difficult to make degrees in counter-prescribing, and say that a druggist should be allowed to do one thing and be punished for doing another of the same essential nature. There may be less risk assumed by him in selling a cough mixture than in prescribing for a person evidently suffering from some severe fever. That, however, is the druggist's matter.

Again, the present internal revenue laws rather support the existing system. They legalize the thousand and one patent medicines. Elaborate advertising brings these to the notice of the public. The latter asks for them at the drug-stores, which, as a matter of business, must keep them. The druggist, if skilled in chemistry, can make an approximate analysis of Dr. A's pulmonic sirup. He may make, say, twenty-five cents profit from each bottle of the latter. "But," he says, "I can make a mixture of my own—practically the same thing and just as good—sell it under my own or an assumed name, and get the manufacturer's as well as the retailer's profit." This latter practice is followed in a thousand stores in this city, and how, pray, can it be prevented? The law allows the sale of the patented medicine, with certain rights reserved to its proprietors. If the druggist cares nothing for these, and is willing to risk a certain portion of his capital in the manufacture and sale of a medicine of his own, who is going to prevent him?

It is very difficult also to say just what drugs shall be considered as medicines, and what not. Many are frequently used in the various processes of domestic economy. Here the law steps in and says that a registration shall be made of the sale of certain powerful poisons which may be ordered as such, *e.g.*, morphine and strychnine. How little this law is obeyed, and how lax is its enforcement, were shown by the recent tours of the reporters of one of the morning papers, who found that in the side avenues of the city it was almost as easy to buy morphine as cream of tartar. The druggist may not sell morphine indiscriminately as such; he can, however, sell *ad libitum* cough and diarrhœa mixtures in which morphine or some other opiate is the principal ingredient. This is done every day, and it is only when some accident arises, or when some spite exists between physician and druggist, that the latter is "peached on."

We doubt not that many druggists justify these practices on the ground of the fact that, if they do not dispense medicines the patient will go to some one of the too numerous dispensaries, where he can receive his medicine for ten cents, or by lying for nothing. If he would go to an outside physician, who would prescribe, the druggist would receive the benefit; but the latter knows he will not do this, and consequently keeps him out of the dispensary by his own prescribing.

Two concluding thoughts suggest themselves: The first one is that the laws against illegal and unlicensed pharmacists should be more rigidly enforced. If those whose duty it is to guard the public in this respect fancy they have closed up all unlicensed pharmacies in New York they are most woefully mistaken. The County Medical Society has about driven out all illegal practitioners, and most commendably has this work been done. Is not also the Board of Pharmacy anxious to win an enviable reputation? The second thought is that any physician can find a practical relief from druggists' prescribing by dispensing his own medicines. We believe that the latter practice is becoming much more common, at least among those who do a general office practice. Nearly all the common remedies are now prepared in compact, tasteless, and solid form, and are therein more agreeable than many of the fluid mixtures so long in vogue. If the druggists regard this as a usurpation they have only themselves to blame.

INFECTION OF AN INFANT THROUGH THE MILK OF A TUBERCULOUS NURSE.

DR. STEIGENBERGER, of Buda-Pesth, has recorded a case of tubercular infection through the nurse's milk in the *Pesther medicinisch-chirurgische Presse.* The facts of this interesting case are summarized as follows: An infant, aged five months, of healthy parentage, developed caseating cervical, glandular abscesses, of a distinctly tubercular kind. Microscopical examination verified the macroscopical diagnosis. Inquiry elicited the fact that the infant had been nursed, for a period of four weeks, by a woman who had to be discharged on account of phthisis, with abundant expectoration. The etiological relationship was thus clearly established.

The infection of human beings through the milk of tuberculous animals has been repeatedly shown, and there is, of course, no reason why the human milk should not carry with it the same pathogenetic power. But, so far as we are aware, the above case is the first instance in which this method of transmission has been actually observed to occur. The inference is obvious, namely, to exercise the greatest possible amount of care in the selection of wet-nurses.

News of the Week.

THE NEW YORK INFANT ASYLUM.—Dr. Edmund C. Wendt has been appointed visiting physician to the above institution, vice Dr. E. Bradley, resigned.

THE AMERICAN SURGICAL ASSOCIATION.—The next annual meeting will be held in Washington, D. C., May 14, 15, and 16, 1889.

DOES NOT CARE FOR MORE GRADUATES THAN IT DESERVES.—Dr. R. G. Jennings, secretary to the Arkansas Industrial University of Little Rock, writes: "In your 'News of the Week,' April 20th issue, headed 'Medical College Commencements,' you have the Arkansas State Medical College' credited with twenty-two graduates. The 'Arkansas State Medical College' has no existence. The only medical college in the State is the Medical Department Arkansas Industrial University. This college had but seventeen graduates out of eighty-three matriculations the past session. It is evident that the Medical Department Arkansas Industrial University was the college meant in your 'News of the Week,' and as we do not desire to be credited with more graduates than we actually had, we deem it but proper to make this statement."

IOWA STATE MEDICAL SOCIETY.—The thirty-seventh annual meeting of the Iowa State Medical Society will be held at Keokuk on Wednesday, Thursday, and Friday, May 15th, 16th, and 17th, commencing on Wednesday at 10 A.M. Dr. D. Macrae, of Council Bluffs, is president of the Society.

NEW YORK POLYCLINIC.—Dr. T. R. Pooley has been appointed Professor of Ophthalmology, and Dr. B. Sachs Professor of Diseases of the Mind and Nervous System at the Polyclinic.

DR. W. M. LESZYNSKY'S CORRECTION.—In the last issue of THE RECORD in Dr. Leszynsky's article on "Localized Basal Meningitis, etc.," p. 454, line five from bottom, instead of "The pupils were equally dilated to 27 mm.," read "The pupils were equally dilated to 8 mm."

A LARGE FEE.—The fact is reported in the public press that H. M. Flagler has presented Dr. George Shelton, of New York, with securities of the par value of $50,000, market value about $87,000, in consideration of his "faithfulness and skill" in attending the case of Mr. Flagler's daughter, Mrs. Benedict, who died on her husband's yacht off Charleston, after a long illness. This is described as the largest fee but one ever paid to a physician.

A CASE OF YELLOW FEVER is reported from Sanford, Fla.

SIR EDWIN CHADWICK.—After more than sixty years of almost, if not quite, unexampled persistent labor for the public welfare, chiefly in the domain of sanitary science, and public health, Edwin Chadwick, still actively at work in the ninetieth year of his age, has been rewarded with the non-hereditary title of K.C.B., the C.B. having been conferred upon him a number of years ago.

DR. BURGGRÆVE, of dosimetric-medicine fame, is organizing an International Congress of Dosimetric Medicine, which will be held in the second week of the month of July next.

DR. HARVEY LINDSLY, the oldest physician in Washington, died at his residence in that city on April 28th, at the age of eighty-five years. Death resulted from exhaustion, due to old age. He was conscious to the moment of his death. Dr. Lindsly was born in Morris County, N. J., January 11, 1804. He was graduated at Princeton College and afterward took a course in medicine in Washington, where he was engaged in active practice until 1872, when he retired. He was an attentive and conscientious physician, and was very successful. He was elected to the Presidency of the American Medical Association at its meeting in Washington in 1858. He was at one time Professor of Obstetrics in the National Medical College, and afterward Professor of the Theory and Practice of Medicine in the same school, and was for a long time President of the Board of Health of Washington City. He was Daniel Webster's physician in the capital city. He contributed a number of valuable papers to the *American Journal of the Medical Sciences*, the *North American Review*, and the *Southern Literary Messenger*.

THE SYMBOL OSS.—At a recent meeting of the Midland Counties Chemical Association a member stated that there was some doubt as to the meaning of the symbol Oss: twenty-eight replies to an inquiry had been received from medical practitioners; twelve understood the symbol to mean eight ounces, and sixteen ten ounces. The president of the Association has in consequence addressed a letter to the General Medical Council urging it "to take such action as will relieve pharmacists from the serious difficulty under which they are now unavoidably placed." There ought, however, to be no difficulty in the matter, and the General Medical Council has already, so far as is in its power, removed all ambiguity by distinctly stating that one pint contains twenty fluid ounces, and that the symbol for it is O.

CURE OF ŒSOPHAGEAL STRICTURE.—Dr. John L. Gish, of Jackson, Mich., writes: "In your issue of April 13th, under 'Correspondence—Our Paris Letter—Stricture of Œsophagus Treated by Electrolysis,' I notice, 'that this is the first time that linear electrolysis has been applied for the cure of stricture of the œsophagus. The success is considered complete.' I wish to call your attention to 'A Case of Tumorous Stricture of the Œsophagus, with Cure by Electrolysis,' reported in full in the 'Transactions of the Michigan State Medical Society,' at Detroit, Mich., June 14 and 15, 1888, by D. S. Campbell, M.D., of Detroit, Mich. Dr. Campbell's report is the first case of which I have any knowledge."

THE THIRD CONGRESS OF THE GERMAN SOCIETY OF GYNECOLOGY will be held in the second half of Whitsunweek (June 12th to 14th), at Freiburg-in-Baden. The following communications are already announced: "Auto-infection," Drs. R. Kaltenbach and H. Fehling; "Treatment of Extra-uterine Pregnancy," Drs. R. Werth and G. Winter; "Tuberculosis of the Genital Organs," Dr. R. Werth; "Pelvic Abscess, Demonstrations of Osteoplastic Resection of the Sacrum, Tubercle of the Genitals, etc.," Dr. W. Wiedow; "Demonstration of Plastic Operations on the Genital Organs by Various Methods," Dr. E. Sonntag; "The Ovary in Uterine Fibro-myoma," Dr. A. Hölscher; "Small Cyst Degeneration of the Ovary," Dr. G.

Bulius; "Treatment of Post-partum Hemorrhage," Dr. Dührssen; "Hypertrophy of the Muscular Fibres in the Gravid Uterus—a Contribution to the Theory of the Lower Segment and Placenta Prævia," Dr. H. Bayer; "Mechanism of Respiration in New-born Infants," Dr. R. Dohrn; "Induction and Regulation of Labor by Ergot, Placentæ Circumvallatæ," Dr. Schatz. Notice of communications, etc., should be sent, up to the beginning of May, to Professor A. Hegar, Freiburg-in-Baden.

THE FOURTH MEETING OF THE FRENCH SURGICAL CONGRESS will be held at Paris, from October 7th to 13th, under the presidency of Baron Larrey. The following subjects are proposed for discussion: 1. "Results, Immediate and Remote, of Operations Performed for Local Tuberculosis." 2. "Surgical Treatment of Peritonitis." 3. "Treatment of Aneurisms of the Limbs."

HE WANTED HIS MONEY FIRST.—San Bernardino, April 17th.—At the trial of John Oakes for the murder of E. H. Morse, cashier of the San Bernardino National Bank, Cal., on December 15th last, proceedings came to a sudden halt by the following occurrence: Dr. May, of San Francisco, the expert witness, was on the stand, but he refused to answer questions till he got his pay. The court sentenced him to jail for six months for contempt. The trial was adjourned until to-morrow amid great excitement. An effort will be made to release May on a writ of *habeas corpus*.

THE CANADA MEDICAL ASSOCIATION.—The Twenty-second Annual Meeting of the Canadian Medical Association will be held at Banff, N. W. T., on August 12th, 13th, and 14th next. A cordial invitation is extended to all members of the regular profession in good standing in the Dominion of Canada, the United States, and Great Britain, to whom the necessary certificates will be sent on application to the secretary, James Bell, M.D., Montreal, Canada.

REGULATING THE PRACTICE OF MEDICINE IN MONTANA.—The Sixteenth Legislative Assembly passed an act regulating the practice of medicine in Montana, and created a Board of Medical Examiners, which are now in session in Helena, Mon.

ST. ELIZABETH HOSPITAL, NEW YORK.—The trustees of St. Elizabeth Hospital have reopened the hospital, and are prepared to receive patients. The medical branch of the institution will be under the supervision of Dr. H. Marion Sims. Patients will be nursed by the Sisters of the Third Order of St. Francis of Assisium. As yet no provision has been made for the care of male patients who are confined to bed, but physicians are at liberty to place men in charge of such patients. Patients coming to the hospital, and having no physician, will be placed under the care of the house physician, Dr. William R. Pryor. The following gentlemen compose the Consulting Board: Drs. E. L. Keyes, F. N. Otis, James B. Hunter, J. E. Janvrin, E. G. Janeway, R. C. M. Page, John A. Wyeth, H. Marion Sims, C. C. Lee.

A HOME FOR THE MEDICAL ASSOCIATION OF ALABAMA.—At a recent meeting of the State Medical Association, held at Mobile, an ordinance was introduced by Dr. B. J. Baldwin, of Montgomery, providing for the erection of a State Medical Library and Museum and Home for the State Health Officer. The object of this building is to secure to the Association a fine medical library and museum. Already some two thousand volumes have been donated as soon as the building is finished. The State Health Officer is also to have a home in this building, and he is to become the custodian of the same.

THE CONTINENTAL ANGLO AMERICAN MEDICAL SOCIETY.—The organization of the Continental Anglo-American Medical Society has proceeded so far that it has been arranged that the first general meeting shall be held on September 30th. Sir Spencer Wells, Sir Joseph Lister, Dr. Quain, Dr. Weir Mitchell, and Professors Ball and Brown-Séquard have been asked to become honorary presidents of the society. Between fifty and sixty British and American physicians have promised to join in the formation of the society. The Executive Committee consists of the following gentlemen resident in Paris: Dr. the Hon. Alan Herbert, Dr. Faure-Miller, Dr. Chapman, Dr. E. Dupuy, Dr. Barnard. The secretary is Dr. Thomas Linn, 16 Rue de la Paix, Paris.

DR. DAWBARN writes concerning an error in his recent paper: After saying that the catgut kept in ether is equally strong as that in ether and alcohol; "and iodoform is but feebly soluble in alcohol (1–80) as compared with ether (1–54)." The error here is in the last line, 1–54, which should read, 1–5.4.

THE ALKALINE BICHLORIDE TREATMENT OF YELLOW FEVER, as suggested by Dr. Sternberg, was carried out during the epidemic at Jacksonville; and Dr. Sollace Mitchell reports that it was very effective. The formula finally used was:

℞. Sodii bicarbonat..... gr. x.–lx.
Hydrarg. bichlorid..... gr. $\frac{1}{10}$
Aquæ puræ..... ʒ iv.

M. Sig.—Give ice-cold every hour during the day, and every two hours during the night.

The bichloride had a powerful diuretic effect on the kidneys, lessening the albuminaria; the alkaline corrected the acidity of the intestinal contents.

THE STORY OF THE RAT'S TAIL is one frequently enlarged upon by physiological teachers, and it has become imprinted as a classic experiment in popular scientific literature and in standard text-books of physiology. M. Paul Bert was the original manipulator of the rat and detailer of the phenomena alleged to be produced in the ultimate appendage of the animal in question. M. Bert sewed the tip of the tail into the back of the rat. After it had taken root in its new position, he cut it off close to its original point of insertion. The rat now wore a tail reversed in position, the former tip being the root. After some time it was found that the new tail was sensitive. Conclusion, the nerves of sensation can carry impulses each way. Dr. Koch has recently performed this experiment on forty rats. In thirty cases the tails united satisfactorily, but never, even eight months later, was any sensation present in the new appendage.

"HONOUR THE PHYSITION with that honour that is due unto him, because of necessitie: for the Lord hath created him." Such is the rather perfunctory argument given by Ecclesiasticus, the son of Sirach, who adds: "The Lord has created medicines of the earth, and he that is wise will not abhorre them."

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, April 22, 1889.

ALEXANDER S. HUNTER, M.D., PRESIDENT, IN THE CHAIR.

DR. GEORGE H. FOX read a paper, entitled

THE TREATMENT OF ACNE WITHOUT ARSENIC, SULPHUR, OINTMENTS, OR LOTIONS.

He said it might be inferred from the title of his paper that he objected to the use of arsenic, sulphur, ointments, or lotions in the treatment of acne, but such was not the truth. These time-honored remedies were doubtless valuable, yet their usefulness was limited, and their routine employment was what he objected to. Some cases of acne could be cured by local treatment alone, but the majority of cases demanded general treatment; that was, the treatment of the patient, and not merely of the patient's skin. In the general treatment the administration of medicines might sometimes play an important part, but the profession had yet to learn that diet and hygienic rules were worth more than all the drugs of the Pharmacopœia. From the stand-point of the therapeutist the best division of acne was into the irritable and the indolent forms of the disease. The practical value of such a division had long been appreciated in the treatment of ulcers. The irritable form was largely reflex in origin, and was greatly affected by disturbances in the alimentary tract and of menstruation. The skin was usually fine and soft, quickly inflamed by stimulating applications, and the use of the watch-key, with which to press out the comedones, was apt to cause raised red spots. Local treatment in these cases, except of the most soothing character, was contraindicated; general treatment was most efficacious. In the indolent form the vascular excitability just mentioned was comparatively slight, while the glandular obstruction was the most important feature. The skin was likely to be coarse and doughy, often greasy. The accumulation of the foreign bodies in the skin led to the formation of the papules and pustules, and in strumous patients to abscesses. In these cases the glands should be evacuated; the skin, in other words, thoroughly cleansed. Soap and water and ointments did not answer.

Bearing in mind that the irritable form required general treatment, and the indolent form local treatment, it would be found that in the former physicians relied more upon arsenic than upon any other remedy; but he thought that if arsenic were banished from the globe the average physician would be far more successful in the treatment of acneous affections. Sulphide of calcium had been recommended by some authorities, but he thought it was liable to lead one using it to neglect more important measures. Ergot possessed value which was not generally recognized. Its chief benefit was seen in indolent acne, and he had come to regard Dr. Denbow's explanation of its action as nearer correct than that which he had formerly offered. In the local treatment of irritable acne he had tried many remedies, but would simply say that at present he seldom found occasion for their use. The treatment of acne in general, which he had found of greatest benefit, was neither new nor original; it consisted in diet and local massage. Diet struck at the root of the disease. Local massage could be made with the fingers or instruments adapted to the purpose. Its object was twofold, to empty the glands and to cause the disappearance of the inflamed lesion. It required to be persisted in. Among the instruments to be used he now felt like apologizing for his former criticism of the circular curette. Trial had proved its value, and the redness which it left would disappear in due time. No fixed plan of treatment of acne would apply to all patients.

DR. L. DUNCAN BULKLEY then read a paper on

A CLINICAL STUDY AND ANALYSIS OF CASES OF PSORIASIS AND THEIR TREATMENT.

Psoriasis being one of the most common and persistent of all the diseases of the skin, merited careful study. The author proposed to review twenty years' personal experience with it. He first briefly described it as a chronic inflammatory affection of the skin, exhibiting dry, red, slightly elevated patches or spots, varying in size and shape, generally circular, covered with a greater or less quantity of dry, white, silvery scales heaped together, and occurring chiefly on the body. As far as was known, it was always produced by the same cause, but little or nothing was known of the nature of that cause.

The disease should not be confounded with eczema, nor scaly papular syphiloderma. It rarely attacked the palms or soles. He had not seen it on the tongue. Psoriasis formed over 4.3 per cent. of all the cases of skin diseases which had come under his observation. From statistics it seemed possible varying changes in temperature, with much moisture, had something to do with the causation. Malaria had been assigned as a cause, but there were fewer cases in St. Louis than in Boston and some other cities less subject to malaria. He had treated two hundred and sixty-four cases altogether. His statistics harmonized in most respects with those of general collections. He had found that between ten and fifteen years of age the females were double the males, while between fifteen and twenty-five years of age the males were double the females. Over forty per cent. of all cases appeared before the second decade of life. The youngest patient seen by him was a little over a year of age. The course of disease was reckoned by years rather than by months or days. Over one-third of all his cases had lasted over ten years, and some as long as forty or fifty years. Many patients ceased their visits long before the eruption disappeared. Over forty per cent. of the cases remained under observation less than six months; quite a proportion of these, however, had yielded to treatment, and were apparently cured. As the disease advanced in duration a smaller proportion were benefited. But sometimes careful and continuous treatment would keep the eruption almost entirely in check even a great number of years. The natural history of the disease showed that it had scarcely any tendency to self-limitation, although its virulence was largely chargeable to the patient's carelessness; yet there were cases which proved intractable however carefully the treatment might be carried out. In a certain proportion of cases the disease was curable, the proportion depending upon the age at which it appeared, the date of commencing treatment, the character of the treatment, and the faithfulness with which it was carried out. It was most curable in children. The cases between the twentieth and twenty-fifth years were very rebellious. The treatment should include diet, general hygiene, medicinal measures, the bath, internal and external medication. Psoriasis was not a local disease, but a constitutional one, more or less akin to rheumatism and gout. Excessive meat-eating he knew to increase the disease, and the use of stimulants to precipitate an attack. Oils and fatty matters, if properly digested, favored a cure. Pure wool should be worn next the skin; sudden changes of temperature avoided; patients got along better usually in an equable climate. As to internal medication, arsenic undoubtedly caused the eruption to disappear in some cases. He had one patient who had taken probably a gallon of pure Fowler's solution in fourteen years. Alkalies were beneficial. Local applications, if used early, might prevent in a large degree development of the eruption. He had about abandoned chrysophanic acid in private practice. He had used more of white precipitate ointment in various degrees of strength than of any other local measure. A visit to mineral springs seemed to have little influence on the disease. Sulphur waters held the

best place. He had not had time to consider some other points, as heredity.

Dr. R. W. Taylor opened the discussion on the two papers. The first, he said, was a neat little paper. It savored of the iconoclastic spirit in therapeutics which was peculiar to the author, a spirit which he thought was justifiable in the present state of dermal therapeutics, and if not carried too far, leading to building up where it tore down; it was very commendable. His division of acne into irritative or hyperæmic, and indolent, was clever; it would do for discussion in a medical society. His want of faith in arsenic was in the main well founded. It could, however, be said that in some cases arsenic did good. It must be remembered that acne showed itself in so many different forms, under so many different circumstances, in so many different skins, in patients of such different habits, that it was hard to generalize in a short paper as to proper therapeutics. He thought that sufficient attention had not yet been paid the theory of the microbic origin of some cases of acne. He thought it would undoubtedly be proved that many cases were of such origin, and in that event it would not be rational to treat a follicle which contained pus, the result of an infective process from without, by a remedy presumed to act as an absorbent or disorganizer of pus when administered within. He believed Dr. Fox would find more cogent reasons for his objections to sulphuret of calcium in that direction than in any other. Ergot sometimes did good, and sometimes it did not, and might prove distressing to the patient. Massage could be used with advantage in different ways. He did not think ointments, lotions, and powders should meet with wholesale condemnation.

With regard to Dr. Bulkley's paper, it was difficult to criticise it. It followed the traditional lines of the text-books. It dealt with statistics, and all had a feeling of scepticism regarding them. They did not furnish good ground upon which to base conclusions. With respect to the question of heredity, it was generally conceded by dermatologists that psoriasis was a hereditary disease, and that this element was manifest in a measure in proportion to the intensity of the affection in the parent.

Dr. H. G. Piffard said that where Dr. Fox generalized in his paper he could agree with him, but where he particularized he could not. He said the author held acne was due more to gastro-intestinal derangement than to derangement in the genital tract. He believed the reverse was true. He had seen more cases in women due to menstrual derangement than to gastric disturbance. Acne could be of internal origin, from disturbance of the stomach, liver, etc., or of external origin, from irritation or bacteria. As to ergot, he had found, as a rule, the severer the case the more effective the drug. Sulphide of calcium was of benefit in a large number of cases, especially those of an irritable nature. Instead of administering it in minute doses, he gave as much as the stomach would bear, a quarter, half, or even a grain. In the indolent form he sought to excite the skin, whether by gymnastics or by scrubbing, powders, etc. The pustules should be evacuated, and he preferred the lancet to scraping. In all cases of acne he looked to the genital organs, and frequently found anterior stricture at the meatus an exciting cause. One patient recovered from his acne after he removed a tablespoonful of smegma from beneath the prepuce. In psoriasis he had found chrysarobin cause the eruption to disappear more quickly than any other topical agent. Arsenic should be given in full doses, continued a long time.

Dr. C. W. Allen thought he had at times seen decided benefit from sulphuret of calcium in acne. He gave it in doses of one-twentieth of a grain every two hours or oftener. As to ergot, he had seen benefit from it in women oftener than in men. If the acne were due to some chronic uterine trouble, this must first be cured. He had applied fluid extract of ergot externally, sometimes in collodion, with apparent good. The presence of one papule favored the development of others, and the physician should keep them empty from the first if possible. The chief success in acne was to come from external mechanical treatment. In psoriasis decided benefit was obtained from chrysarobin, the disagreeable effects of which were avoided by mixing it with gutta-percha. He had also employed it combined with salicylic acid with advantage.

Dr. E. B. Bronson thought Dr. Fox had not laid sufficient stress on disturbances of the genital system as a factor in acne. In the vast majority of cases the disease was aggravated by a sexual neurosis. Acne was what might be termed a developmental disease. As to removal of comedones, in many instances they might better be let alone. If the plugs could be easily dislodged it should be done. Sulphur was of decided benefit, but should not be employed indiscriminately. It was in cases marked by suppuration that this drug did most good, and he believed its action was as a germicide. In acne indurata the operative treatment was most important. Here the curette came in. As to psoriasis, he had found it almost ineradicable. Chrysarobin should supersede many of the old time topical applications, as mercurial preparations and tar. In some cases antharobin was almost equally efficacious, and did not inflame the skin unless in exceptional cases.

Dr. Sherwell, of Brooklyn, had not heard Dr. Fox's paper, but endorsed the remarks of Dr. Bronson. Acne was a developmental disease, and was closely related to the genito-urinary tract. It was much aggravated by genito-urinary irritation. Both external and internal treatment were efficacious. He spoke of criticisms made upon his experience with the passage of the urethral sound as a means of relieving acne. As to psoriasis, he believed the proportion of the cases to the whole number of cases of skin affections was not greater than three and a half per cent.; he had derived benefit from chrysarobin.

Dr. William H. Thomson, speaking from the standpoint of the general practitioner, said he had for a long time been accustomed to look to the genital organs in both sexes, and also to the gastro-intestinal tract, in the treatment of acne. Disturbances of these two tracts were often associated. In several cases of acne he had obtained benefit from a combination of benzoate of soda, naphthol, and salol. Arsenic should not be administered in acute inflammatory affections of the skin; it was useful in chronic cases. In psoriasis his favorite remedy was large doses of liquor potassa. The hereditary influence would be acknowledged by all. He believed that the majority of suppurative skin affections were of microbic origin; but in addition to exposure to the microbe it was necessary that the soil should be adapted to its growth. The skin had to be disinfected, which meant the killing of the microbe.

Dr. Jackson added his testimony to the efficacy of the curette in acne, especially of the pustular variety.

Dr. Cranmer thought dermatologists would accomplish much in the management of acne by recommending earlier marriage. When persons with acne married, their skins became clear. Some alkali was probably better than any other internal remedy. The compound decoction of aloes, although disagreeable and old-fashioned, was very useful. One of his patients, with an obstinate form of acne, obtained relief lately by a few visits to a Turkish bath.

Dr. Bulkley thought the discussion showed that in the treatment of acne the several methods mentioned were useful. He had obtained the best results, in most cases, by attention to the digestive system. He had seen many cases cured without any attention to the genito-urinary system. As to the question of marriage, many cases occurred among married people with families. It was important to clear, empty the follicles, and scrape them. As to the influence of heredity in psoriasis, among his patients he had obtained the history of one hundred and forty-three brothers and sisters, only fifteen of whom were affected by the disease, or ten per cent., while other statistics gave fifteen per cent.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON THEORY AND PRACTICE OF MEDICINE.

Statea Meeting, March 19, 1889.

R. C. M. PAGE, M.D., CHAIRMAN.

DR. HENRY LING TAYLOR read a paper (see p. 480) on

THE THERAPEUTIC VALUE OF SYSTEMATIC PASSIVE RESPIRATORY MOVEMENTS.

DR. S. BARUCH, having referred to the advantage of securing exact and positive results in therapeutics in general, said that he believed the day was just dawning for exercise as a valuable remedy. As was well known, Oertel had graduated the exercise to the type of disease in his system of mountain climbing, and admirable results had been obtained by other investigators in the same direction. Especially on account of its precision, therefore, he thought the method described by Dr. Taylor deserving of credit. It could be gauged accurately according to the circumstances in each individual case. Personally, he had had but little experience with the apparatus for passive respiratory movements, but he believed that it was based on philosophical apparatus. When a student of medicine, he became imbued with the idea that he was threatened with phthisis, and for the purpose of increasing his chest-power he had hit upon a simple device which appeared to him to be of practical utility. A long hickory stick was suspended from the limb of a tree by a rope tied around its middle, at such a height that, when he grasped it with his two hands he was obliged to stand upon tip-toe; and with this apparatus he practised daily until he was able to swing upon the stick. Later, he had employed this kind of chest-expansion not only in those in whom there was a predisposition to phthisis, but also in those in whom the disease already existed in its incipient stage, and it had been attended with satisfactory results. While it was not always possible to procure the use of apparatus such as that employed by Dr. Taylor, he thought that a great deal could be accomplished by simpler methods such as that which he had mentioned.

DR. JUDSON said that expansion of the chest by upward traction on the arms is illustrated in Sylvester's method with the drowned. He had seen an apt illustration in the dissecting-room, when a cadaver had been drawn up through a shaft by the hands fastened to a rope. The lungs being thus extremely inflated, a long-drawn sigh was heard as the subject was laid supine on the floor. Dr. Henry G. Davis, in the *American Medical Monthly* in 1856 and 1858, had called attention to the fact that the pectoral muscles make a connection between the humeri and the anterior surface of the chest, and when the arm and the anterior ends of the ribs are fixed by the hands grasping a bar overhead, the posterior ends of the ribs are forcibly drawn down by the weight of the lower part of the body, thus directly and forcibly expanding the chest. Another illustration is seen in the action of a patient suffering from asthma, who rests his hands and forearm on a table or the back of a chair to minimize the muscular effort of breathing. The respiratory brace of Dr. French, described in 1877 in the *Boston Medical and Surgical Journal*, in THE MEDICAL RECORD, is designed to support the shoulders and arms in the exhaustion of orthopnœa. The apparatus and movements described by Dr. Taylor expand the chest by traction made on the arms. I am practically familiar with their use, and confirm all that he has claimed for them. But it seems to me that much good can be obtained by carrying out the same idea, partially at least, with simpler apparatus. Nothing could more perfectly meet the indications in a case of asphyxiation from any cause than Dr. Taylor's respirator, which faithfully copies the natural respiratory movements of the chest, but simple suspension might well be used to facilitate difficult breathing, or to permanently expand the chest. With the patient seated in a suitable chair, by a slight adjustment of the body, more or less of its weightc ould be placed in suspension. Dr. Davis prescribed suspension by the hands in the treatment of lateral curvature of the spine, a very practical suggestion, because the difficulties arising from rotation, in the way of supporting the spine mechanically from the outside, make it desirable to increase in every way the contents or capacity of the chest, a reduction of which is a constant feature of asymmetry. He also advocated the treatment of phthisis pulmonalis by suspension, a practice which has a great deal to commend it from a purely mechanical point of view. I would discredit the use of the Indian club, the health lift, and similar exercises in every-day domestic gymnastics, especially for children, in favor of exercises which include suspension by the hands or shoulders. The former compress the contents of the chest in order to give a fixed point for muscular effort, while the latter join the advantages of general exercise to direct expansion of the chest.

DR. L. F. BRYSON referred to a case of lithæmic neurasthenia, in which the treatment prescribed by a number of physicians failed to afford relief. When the patient was treated by means of the Taylor apparatus, however, the mental depression which had been a most prominent feature of the trouble, was greatly benefited by the end of a month, and in six weeks this had entirely disappeared. The good results noted he believed were due to chemical changes as well as mechanical. One great advantage of the method was that, during the time the apparatus was being used, volition was abolished and thought disappeared. It was rest, exercise, and stimulus combined, and it was entirely free from certain objectionable features belonging to electricity, hypnotism, and other methods of treatment.

DR. A. B. JUDSON said that it had been known for a good many years, that suspension of the body by the hands has the power of expanding the chest, and this idea formed the basis of Sylvester's method of artificial respiration. When a student at the Jefferson Medical College, in Philadelphia, he was on one occasion in the dissecting-room at an unusual hour, and witnessed a phenomenon which he was at that time entirely unable to explain. A cadaver was being raised through a trap-door by ropes attached to the wrists and passing over a pulley, and he noticed that there was an immense expansion of the chest. When the body was placed in a supine position, however, a distinct sigh escaped from the lips, due to the expulsion of air from the chest as a result of the changed position. The explanation was perfectly plain to him when, some time afterward, he had the opportunity of reading the paper of Dr. Henry G. Davis, of this city, on the "Treatment of Deformities," published in 1854, in the *American Medical Monthly*. In this he called attention to the direct connection of the pectoral muscles with the humeri, so that when the body was suspended by the arms, the chest was forcibly drawn open, like an accordeon, and the thoracic capacity was at its utmost.

Another illustration of the same thing was shown in the attitude of patients suffering from an attack of asthma; the hands or forearms being rested on the back of a chair or other support in order to facilitate respiration. This idea was also illustrated by the respiratory brace described by Dr. French in the *Boston Medical Journal*, in 1877. It was contained, too, in the apparatus of Dr. Taylor, although the method employed was different from that of Dr. Davis, the passive respiratory movements being carried out alternately. Dr. Judson said he was familiar with the Taylor treatment, and heartily approved of all that had been said in the paper in advocacy of it. At the same time, it seemed to him that the method could be carried out sufficiently well in practice without the apparatus. Dr. Davis had also written a monogram on the curability of phthisis pulmonalis, and he was strongly convinced that suspension by the hands should constitute an important portion of all gymnastic exercises designed to assist in expanding the chest.

DR. M. P. JACOBI said that there was apparently the

same objection against Dr. Taylor's method as against the usual gymnastics, viz., that the movements imitated not normal, but abnormal, respiration, or in other words, called into action the mechanism which the organism keeps in reserve for dyspnœic respiration. In this particular it differed from the inhalation of compressed air, which exactly imitated normal respiration. During the expansion of the lung-tissue by inspiration, the centripetal fibres of the vagus were stimulated, and conveyed the impression to the respiratory centre in the medulla. When compressed air was inhaled from the Waldenburg apparatus, or when the pneumatic cabinet was employed, not only did the chest-wall rise very high, but the inspiratory movement was enlarged and prolonged, and the expiratory movement was also rendered more slow.

Dr. Jacobi then exhibited a number of tracings from the Burdon-Sanderson stethometer, taken while the patients were sitting and standing, and during natural respiration, passive movements by Sylvester's method, and inhalation of compressed air from the Waldenburg apparatus. It was evident, she said, that the expansion of the lung was much greater than in ordinary respiration when passive movements were employed; but this was still more marked when the compressed air was used, while the whole act of respiration was very much longer. Moreover, this increased amplitude of respiration was continued after the cessation of inhalation of compressed air; a fact that was never noticed after the discontinuation of the passive movements. The duration of the respiratory act was, in fact, enormously increased.

There could be no question as to the very great importance of increasing the respiratory power in many of the conditions referred to in the paper. It was not merely the size of the chest which was to be taken into consideration, but the depth and amplitude of such respiration; and it was certainly not those with the largest chests whose respiration was most satisfactory. The desired stimulus to the medulla could not be secured by passive respiratory movements. This could only be caused by the natural respiratory movements, such as characterized the inhalation of compressed air. In this natural respiration there was a direct stimulus to the vagus, and through it to the medullary centre.

Dr. W. B. Wood said that probably four-sevenths of the entire population suffered from pulmonary complaints, and the great aim of the present discussion he believed to be to determine, if possible, the best means for diminishing the present enormous mortality from phthisis. He had no doubt that there was a great deal of good in Dr. Taylor's method; but this might be equally said of a great many of the different forms of treatment which were brought forward from time to time. For his own part, he preferred to cull what was best from all that were of advantage. There were some points of importance to which Dr. Taylor had not alluded in the paper. Thus, the age of the patient, and the stage of the disease to be treated, had always to be taken into consideration. Before children were five years of age was the time when the most could be accomplished in the way of preventing phthisis in the future; but Dr. Taylor had not told us whether his method could be employed in children of five, and he was positive that it could not be resorted to in those which were only three years of age.

The stage of the disease was also a matter of the greatest importance among those who, like himself, are in the habit of constantly examining patients for treatment by means of the pneumatic cabinet. He believed that the larger their experience extended, the more it became the practice to go back to the very beginning of the trouble. What one observer would call the stage of predisposition, another, more experienced, would designate as actual phthisis. When the patient had gone to such a stage that the presence of the bacillus tuberculosis could be detected, we had one of the most difficult cases to treat that the medical practitioner ever meets, and even at the best a long up-hill task lay before us. We should endeavor, therefore, to be able to diagnose the conditions which occur antecedently to this stage.

In a general way, he said, he believed that passive movements of all kinds are more likely to develop muscle than anything else, and, furthermore, that the muscle so developed was not of the best kind. That the respiratory motions should be of a voluntary character, as Dr. Jacobi had remarked, he thought a vital point. It was by no means the man with the biggest chest and the best developed muscles who was the best breather. The stimulus needed for proper respiration was a current of air passing over the lung-tissue in such a way as to stimulate the nerves, by which the stimulus so imparted would be conveyed to the nervous centres. The bad quality of the muscle developed by massage was now quite generally recognized, and was well recognized in what was known as the "massage leg." It was too much the practice at the present day to use excessive passive exercise at the expense of voluntary exercises. From the condition brought about by such means there was always a reaction, as Dr. Taylor had himself acknowledged in the paper.

Now, whenever we had reaction, it meant an over-use of nature's power. The strength of the patient was a very important element in every instance, and he also considered that there was a good deal of risk in instituting any form of artificial inspiration until we were certain that the subject had the capacity for ordinary respiration. It should be ascertained that the nasal passages were free, and in women that the normal shape of the body had not been altered by the wearing of tight-fitting corsets. With regard to the Waldenburg apparatus, he would say that it seemed to him that there was nothing in nature which would warrant us in forcing compressed air into the lungs, since this set up a respiratory stimulus which was not normal. The pneumatic cabinet, however, was not open to this objection.

Dr. A. S. Hunter said that within the past two or three years he had had frequent occasion to note the advantages to be derived from increased respiratory capacity in various conditions, but more particularly in chloro-anæmia. The pneumatic cabinet having been brought to his notice, he had purchased one, and from his experience with it, which had been extremely satisfactory, he believed that in this apparatus we had the means of securing what we needed. All chloro-anæmics were superficial breathers, and with the pneumatic cabinet we could get a perfect and complete expansion of the chest. Under its use his patients improved in every way, and, aside from its beneficial effects on the general health, it was, to his mind, the most efficient means that had as yet been devised for increasing the respiratory power.

Dr. Kitchen said he should like to inquire of Dr. Taylor whether he used his apparatus with the intention of developing the chest-power beyond what could be used in the ordinary pursuits of the patient, or simply as a tonic and stimulus. It was a well-known fact that highly trained athletes very frequently fell victims to phthisis or cardiac disease after they ceased to engage in active muscular exercise, and he found that the over-development of the respiratory capacity would be likely to result in evil after the patients discontinued the treatment.

Dr. Quimby said that, in all such exercises as were under discussion, the fundamental point was the improvement of the general nutrition. In phthisis the bacilli were too deep-seated in the lungs to be reached by any form of medication or antisepsis, and hence any method of treatment which had this idea alone in view would prove utterly futile. We had tried the best air and other inhalations, and had only been disappointed with the results obtained. He believed, therefore, that what was needed was the employment of stimulants to the promotion of cell-action and general nutrition. This was the reason why he preferred the pneumatic cabinet to all other forms of apparatus. It accomplished all that passive exercise and compressed air from the Waldenburg cylinder did, and in addition (and what was more important) it had the ad-

vantage of clearing out bad material from the system and putting good material in its place.

In bringing the discussion to a close Dr. Taylor said that he was grateful, not less for the commendations than for the friendly criticisms on his method of treatment, which had been expressed by the various speakers. In reply to Dr. Kitchen's inquiry he would say that he did not seek to over-develop the chest, and in the class of cases in which the apparatus was called for (the patients, as a rule, being narrow-chested and possessing little respiratory capacity) he did not think that he could very well do so. In others in which he had occasion to resort to the apparatus it was not employed sufficiently long to cause any undue development.

In regard to the treatment of phthisis, he had not gone into that at all in the paper, and he certainly did not wish to be understood as recommending the apparatus in question in this disease. He referred to it in connection with phthisis merely to speak of what he believed to be its advantages in children or youths who had a hereditary predisposition to consumption. He had listened with much interest to Dr. Jacobi's remarks, and believed that all the light that could be thrown on this subject was most desirable. Without going into theoretical questions, he would only say that the practical results which had been obtained by him with the apparatus described had been very satisfactory, and he thought that this was the best proof that could be afforded of its utility.

SECTION IN SURGERY.

Stated Meeting, March 11, 1889.

ROBERT ABBE, M.D., CHAIRMAN.

PARTIAL EXCISION OF THE OS CALCIS FOR PAINFUL CICATRIX.

THE CHAIRMAN presented a man who, four years before, had sustained a lacerated wound of the heel, which resulted in destruction of considerable bone and overlying skin. The cicatrix which was left covered a conical projection of bone, and was so painful to pressure that the patient had not been able to walk during the four years. He had been successively operated upon by various surgeons, but without benefit. Seeing that an ordinary plastic operation would serve no good purpose, Dr. Abbe decided to remove the conical projection of the os calcis, and thus substitute a flat bony surface for the support of the body's weight at the heel. The result had been that the patient could walk without the slightest pain. Although a piece of minor surgery, the operation was a very important one, for cicatrices of the heel, as well as ulcers of the foot, if tender, were ordinarily considered beyond remedy.

HYSTERICAL MYOCLONUS MULTIPLEX IN A MALE.

The Chairman also presented a man in his twenties, who after sustaining a sharp pain in the back from a violent effort to save himself from a fall, claimed to lose power and sensation in the right leg. Pricking with the pin caused apparently no pain. He had also myoclonus multiplex, or clonic spasm, in groups of muscles in various parts of the body. For instance, when the muscles of the neck became spasmodically contracted, it appeared as if the head would be jerked off. An hysterical condition immediately suggested itself, and was proven to exist by placing the patient partially under the influence of ether, when power in the legs quickly manifested itself. The patient had also claimed to have a single painful point in the spine, but by suggestion as many as ten pretended painful points were brought out. One day, when rudely pushed across the floor and roughly treated, his difficulty in walking quite disappeared. Dr. Abbe thought the patient was not a malingerer, but a hysteric.

MODIFIED TRACHEOTOMY.

DR. D. BRYSON DELAVAN described a modified tracheotomy which he first performed several years ago in a case of cancer of the larynx. Since then he had performed the operation a number of times, and had found it a valuable procedure, and inasmuch as his first description of it had not received the attention he thought it deserved, he wished again to call attention to it. The method was more particularly adapted to conditions of the larynx in adults requiring the prolonged use of a tracheotomy tube. In adults the cartilaginous rings of the trachea became hard and less resilient, and when a simple incision was made, as in tracheotomy, there was some difficulty in introducing the tube, and unless the wound were held gaping by means of a pair of forceps, there was danger of doing violence to the parts while pushing in the tube. After the tube had been worn for some time (as was necessary in cases of obstruction from cancer, etc.) absorption of the tissues immediately around it took place, and left a hole through which the tube could be introduced without force or irritation. Dr. Delavan obtained this desired result immediately by cutting out a round opening, including a part of two cartilaginous rings, in the adult. This form of opening not only facilitated introduction of the tube, but avoided irritation by pressure of the separated walls upon the tube, and also bulging forward of the posterior segment of the trachea. In reply to the Chairman, whether a fistula was likely to remain, Dr. Delavan said that in these cases the tube usually had to be worn the remainder of life. If only a vertical incision were made, the wearing of the tube for some time would anyway result in absorption of tissues and an opening of similar form.

MORBUS COXARIUS.

DR. V. P. GIBNEY presented, at the close of the meeting, sections of the head of the femur and acetabulum illustrating the early stage of morbus coxarius, before the formation of pus, and expressed the opinion that it was of tubercular origin. The boy, aged twelve, had died of tubercular meningitis.

DR. W. W. VAN ARSDALE read the paper of the evening,

SUBLUXATION OF THE HEAD OF THE RADIUS IN CHILDREN, WITH A RÉSUMÉ OF 100 CONSECUTIVE CASES.

The lesion, he said, is generally seen under the following conditions: The child is brought by the mother, complaining of pain at the wrist and inability to use the arm. The child lets the arm hang motionless at the side, slightly flexed at the elbow, the hand midway between pronation and supination. The mother says that when leading the child by the hand it stumbled, and in her effort to save it from a fall she jerked the hand upward. At this moment she felt a click at the wrist and the child cried out in pain. Although the child did not fall, it has not used the hand since.

On examination, everything about the hand is found normal; the movements at the wrist free and not painful. Abduction, adduction, and extension are made passively without resistance. The elbow reveals no deformity whatever. The head of the radius, too, appears to be in place. At this time in the examination the first abnormal symptom is discovered. Pressure, even if slight, on the head of the radius is painful, and if the forearm be flexed beyond sixty degrees it is checked by the efforts of the child, owing to pain. The child never supports the arm with the injured one, as is the case in injuries to the shoulder. Complete pronation is possible, but somewhat resisted; supination, however, causes the child to cry out with pain and actively resist motion. There also appears to be some mechanical resistance to supination. Forcing supination still farther, a distinct click is felt at the elbow, or more directly at the head of the radius, after which all the movements of the arm at once become free and apparently cause no more pain. One symptom, however, still remains. Direct pressure on the head of the radius causes pain. In two or three days the child may be brought back, with swelling at the elbow-joint and all the

symptoms just described aggravated, because of recurrence of the subluxation. If, however, the arm is put up, the elbow flexed at a right angle, the hand midway between pronation and supination, the mother will say at the end of three or four days that the hand must be well, as the child complains no more, and on removal of the bandage the arm will be found normal, and active and passive movements free.

Such was the clinical picture of a condition which the author had described as subluxation of the head of the radius, and which had been called by various writers, partial dislocation of the radius, dislocation downward by elongation, etc. The injury was not a dislocation as that term was usually employed, as there was no extensive rupture of ligaments, nor were the articulating surfaces of the bone forced from their normal position to any great extent. The injury was slight, but always occurred in the same typical manner, which fact should place it as a distinct lesion, and it had been so recognized by a long line of observers. While it had been frequently made the subject of careful inquiry, yet it was not well understood, nor was it so widely known as at times not to escape detection. About seventy articles had been written on the subject, mostly in periodical literature. Fournier, 1671, first called attention to it; about four hundred cases had been described altogether, yet among injuries at the elbow this one was comparatively frequent.

Strumous diathesis had been frequently mentioned as a predisposing cause. Overwhelming testimony was in favor of traction on the hand or forearm as the exciting cause. The greatest harmony prevailed regarding the symptomatology.

The mystery surrounding the lesion was due chiefly to the click or snap heard on supination of the arm. To account for this different theories of the nature of the lesion had been advanced. Many writers believed the lesion consisted in a slight and incomplete anterior displacement of the head of the radius, with stretching of the ligament. Some thought it due to contraction of the biceps partially dislocating the head of the radius backward; a view which Dr. Van Arsdale had convinced himself was erroneous, as the biceps in the child was not strong enough to alone produce the lesion. The view which had gained most in favor was that of partial dislocation from extension. But why in this case should the injury persist? Because, according to Streubel, whose explanation had been accepted by many, of folding in of the orbicular ligament. Proof of this explanation was based on cadaver experiments; but inasmuch as there was loss of muscular tone after death, this test was not altogether convincing. Dr. Van Arsdale had been unable, by experimental and clinical study, to satisfy himself of the exact nature of the lesion. There were scarcely any records of post-mortem examinations.

The author's hundred cases were treated at the dispensary. They were exclusive of thirty doubtful ones. The average age was two years and one-fourth. Many of the children were badly nourished, while others were robust, of healthy parents. In some, undoubted signs of rickets were present; tubercular constitution was not general. The exciting cause was some violent traction of the hand or forearm. No displacement could be felt. During reduction, with the thumb placed over the head of the radius, the jar was felt to be lateral, not longitudinal, when the snap from replacement was heard. In a number of cases the click could not be heard; while in others it could be repeated twice or even three times. The after-treatment consisted in the use of a single pasteboard box splint, the hand kept in a sling perhaps five days.

The Chairman, in stating that the paper was open for discussion, remarked that some years ago he had roughly estimated the total number of surgical cases seen by him to be over twenty thousand; yet he had not seen this particular lesion, or, at least, had made no note of it.

Dr. V. P. Gibney had seen very few cases. The lesion might possibly be mistaken for the early stage of osteitis, yet the history of the case would probably readily settle the diagnosis.

Dr. Koplik had seen a great many of the cases included in Dr. Van Arsdale's list. The lesion was typical, and there could be no mistake about its recognition. The two principal diagnostic points were paresis and pain on manipulation of the forearm. He thought there was a rachitic tendency in many of the cases seen by Dr. Van Arsdale; it was probably present in some cases, and yet presented no marked outward manifestation. He was disposed to think some such predisposition usually existed in addition to the exciting mechanical cause. He thought the theories of Fournier and Chassaignac went a long way to explain the symptoms.

Dr. A. B. Judson had seen but one case, and in that instance the lesion seemed subsequently to have spontaneously disappeared.

Dr. C. A. Powers said his attention was first called to this class of cases in 1885, and during the two years ending May last, he saw 15 cases at the Chambers Street Hospital. The entire number of recent injuries treated at the hospital during that time was 25,000. Of the 15 cases, 12 were in children, 3 in adults. The symptoms were typical—disability, pain over the head of the radius, and a distinct snap on reduction. It was a snap rather than a click. As a rule, the history of the injury was indefinite. In a considerable number the parents had heard a distinct click at the elbow or wrist at the time of the injury. The cases in adults gave him more concern than those in children. In the latter he kept the arm quiet two or three weeks after reduction. There was no recurrence, no disability. In the adults pain and dis ability at the elbow persisted two or three months—a much longer time than would be expected from so slight an injury.

Dr. Powers thought the theory of longitudinal fracture through the head of the radius was not tenable. In one case, that of a child three years of age, there was a distinct history of lifting by the hand as the cause of the injury, and he felt positive the lesion was a diastasis at the neck of the radius. He could easily grasp the head of the radius between the thumb and forefinger, and on pronating and supinating the forearm he was certain that the head did not move; and there was soft crepitus. One would suppose separation between the neck and head of the radius might be more frequent.

Dr. Van Arsdale said, in reply to Dr. Gibney's question, that he thought no serious consequence followed in cases not treated. There were several reasons why more of these cases were seen in dispensary practice than in hospitals or private practice; the chief ones being the comparative insignificance of the lesion and free treatment at the dispensary. He could not agree with Dr. Koplik, that the paresis was not due to pain. As to diastasis at the neck of the radius, when this lesion existed it could readily be determined by the greater mobility and crepitation.

The Prescription.—There was, some time ago, a doctor whose morning levees were crowded beyond description. It was his pride and boast that he could feel his patient's pulse, look at his tongue, probe at him with his stethoscope, write his prescription, pocket his fee, in a space of time varying from two to five minutes. One day an army man was shown into the consulting room, and underwent what may be called the instantaneous process. When it was completed the patient shook hands heartily with the doctor, and said: "I am especially glad to meet you, as I have often heard my father, Colonel Forester, speak of his old friend Dr. L." "What!" exclaimed the doctor, "are you Dick Forester's son?" "Most certainly I am." "My dear fellow, fling that infernal prescription into the fire, and sit down quietly and tell me what's the matter with you."—*Murray's Magazine.*

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 21 to April 27, 1889.

MAGRUDER, DAVID L., Colonel and Surgeon. By direction of the Secretary of War, his retirement from active service this date, by operation of law, under the provisions of the act of Congress, approved June 30, 1882, is announced. Par. 4, S. O. 94, A. G. O., April 23, 1889.

VOLLUM, EDWARD F., Colonel and Surgeon. Promoted to Surgeon, with rank of Colonel, from April 23, 1889.

WRIGHT, JOSEPH P., Lieutenant-Colonel and Surgeon. Promoted to Surgeon, with rank of Lieutenant-Colonel, from April 23, 1889.

WOODRUFF, EZRA, Major and Surgeon. Promoted to Surgeon, with rank of Major, from April 23, 1889.

WHITE, ROBERT H., Major and Surgeon; EWEN, CLARENCE, Captain and Assistant Surgeon; COCHRAN, JOHN J., Captain and Assistant Surgeon; and EWING, CHARLES B., First Lieutenant and Assistant Surgeon. Pursuant to instructions contained in letter from Adjutant-General's Office, Washington, April 13th, the above-named medical officers will assemble with troops in New York Harbor, on the 27th instant, prepared for field service in connection with the New York Centennial parade. S. O. 90, Headquarters Division of the Atlantic, Governor's Island, New York City, April 19, 1889.

WALKER, FREEMAN V., First Lieutenant and Assistant Surgeon. By direction of the Secretary of War, leave of absence for four months on surgeon's certificate of disability, with permission to leave the Department of Texas, is granted him. Par. 12, S. O. 92, A. G. O., April 20, 1889.

WOODRUFF, EZRA, Captain and Assistant Surgeon. By direction of the Secretary of War, relieved from duty at Fort Missoula, Mont., and to report in person to the Commanding Officer, Fort Monroe, Va., for temporary duty at that post. Par. 14, S. O. 72, A. G. O., April 20, 1889.

HAVARD, VALERY, Assistant Surgeon. Relieved from duty at Fort A. Lincoln, Dak., and ordered to Fort Buford, Dak.

CRAMPTON, L. W., Assistant Surgeon. Relieved from Fort Bridger, Wyo., and ordered to Fort Lyon, Col.

SPENCER, W. G., Assistant Surgeon. Relieved from Fort Yates, Dak., and ordered to Fort Bridger, Wyo.

ROBERTSON, R. L., Assistant Surgeon. Relieved from Fort Buford, Dak., and ordered to Fort A. Lincoln, Dak. Par. 29, S. O. 95, A. G. O., April 24, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending April 27, 1889.

WILSON, GEORGE B., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, and to the Iroquois.

CORDEIRO, F. J. B., Passed Assistant Surgeon. Detached from the Vandalia, and to the Naval Hospital, Mare Island, Cal.

BRANSFORD, JOHN F., Surgeon. Ordered to the Iroquois.

STITT, EDWARD R., Assistant Surgeon. Ordered to the Bureau of Medicine and Surgery, Washington, D. C.

FEREBER, N. M., Surgeon. Ordered to Naval Academy, Annapolis, Md., for examination of candidates for admission to the Academy.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending April 27, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	10	3
Scarlet fever	378	49
Cerebro-spinal meningitis	5	4
Measles	196	10
Diphtheria	201	57
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

THE NETTLE AS A THERAPEUTIC AGENT.—In the *Meditzinskoiĕ Obozrenië*, No. 16, 1888, p. 330, Dr. Vladislav A. Frankowski, of Kharkov, whose medical experience embraces about one hundred thousand cases, speaks enthusiastically of "urtication," that is to say, slapping or pricking with a bundle of fresh nettle-twigs, for one or several minutes, once or several times a day, as an excellent epispastic application. It has considerable advantages over ordinary derivative remedies, inasmuch as it is quite innocuous (not irritating the kidney, and leaving no permanent marks on the skin, etc.), cleanly, simple in application, rapid in its effect, and cheap. Dr. Frankowski recommends it especially in (*a*) anæsthesia, paralysis, and neuralgia, especially sciatica of peripheral origin, as well as in incipient tabes, where he applies the nettles directly to the parts affected; (*b*) in dyspnœa depending upon cardiac or vascular disease, where "general urtication" (that is, pricking along the vertebral column and over the whole abdomen and chest) is said to "relieve the agonizing symptoms far more rapidly and more completely than any other epispastic does;" (*c*) in respiratory diseases, spinal and thoracic urtication soon allays cough, promotes expectoration, relieves oppression, and produces a striking, though only temporary, improvement in the subjective condition; (*d*) in amenorrhœa, urtication of the lumbar, sacral, and internal femoral regions excites the menstrual flow, even when employed alone, without any adjuvant; (*e*) in impotence, pricking the loins, sacral region, and genital parts is also of great service; (*f*) in rheumatic, muscular, and articular pains, urtication, combined with cold bathing, is often far more useful than anything else; (*g*) in syncope, asphyxia, concussion of the brain, coma, etc., energetic general urtication is an invaluable resuscitating measure which has been successfully resorted to by the peasantry all over Russia from time immemorial.—*Brit. Med. Journal.*

A MODIFIED SCUDDER'S KNOT-TIER.—Dr. J. T. Crow, of Carrollton, Ill., sends us a model of a modification of the knot-tier described by Dr. Scudder in THE MEDICAL RECORD of March 16th. It is made of a simple piece of copper wire, twisted to form the handle, with the two ends diverging as in the original instrument and bent over at their extremities so as to form eyelets, through which the ligature is passed. It can be made of any kind of wire, and may be nickel or silver plated. The handle may be encased in rubber or wrapped with a piece of muslin to give it more bulk, if desired. The eyes can be given any inclination desired by bending the jaws up or down. The modification can be made much more cheaply than the original, or in fact can be constructed by the surgeon himself out of a piece of wire, with the aid of a pair of nippers.

A HUNDRED YEARS HENCE all we may be doing now may be nothing more than curious history.

Professor Virchow and Homœopathy.—A case of much interest, especially in connection with the cancer of the larynx and the case of the late Emperor of Germany, has recently been reported (*Lancet*). Professor Virchow writes to the *Deutsch Med. Wochensch.* as follows: "In December, 1888, a letter of thanks from a patient to a homœopathist was published in a local paper, ascribing to the latter the cure of a severe disease of the larynx which had been recognized by Berlin specialists and by me as cancer. This letter of thanks has been circulated far and wide, especially in the provincial press, and has induced several physicians to address questions to me and letters, with the request that I would enlighten the public by communicating the real facts of the case. In view of this public and professional interest in the matter I think it right to make the following statement: It is true that the patient, a man of sixty-eight, was examined with the laryngoscope by Professor Krause's assistant, Dr. Friedländer, on December 7, 1887, in Professor Krause's absence, and found to be suffering from cancer in the larynx. The growth, as far as it was visible, was removed by Dr. Friedländer through the mouth next day, and brought to me for microscopic examination. I confirmed the diagnosis. A recent examination of the still existing remnants of the growth yielded the same result. I am credibly informed that the patient did not consent to the partial extirpation of the larynx which was proposed to him, but went home and wrote to a homœopathist, who, without ever seeing him before or after, sent him his advice and remedies by post. The patient was re-examined by Dr. Krause a few days ago, Dr. Friedländer being ill. Dr. Krause ascertained that no cure has taken place. Though at this moment—that is, more than fourteen months after the endo-laryngeal extirpation of the growth—the patient suffers no pain or obstruction except lasting hoarseness, the examination with the laryngoscope showed that the disease remains unchanged."

The Peanut in Therapeutics.—The peanut, beloved of the gods—of the gallery, may possibly vindicate its claims to popularity, as it is recommended as a remedy for insomnia. It is said to be quite efficacious when taken *ad lib.*, freshly roasted, before retiring. It is true the recommendation is made by a clergyman, but as it is not a new tonic made from bad whiskey, an opium cure containing morphine, or any of the other blessings to humanity usually floated on clergymen's endorsements, we need not condemn the peanut without a trial. It is certain that the free use of this nut sometimes produces vertigo and slight mental exhilaration.—*Philadelphia Medical Times.*

A New Method of Performing Uranoplasty.—At a recent meeting of the Society of Physicians of Vienna, Professor Billroth showed four patients on whom he had performed staphyllorraphy and uranoplasty, by a new method, at one sitting, with much success. Uranoplasty had been introduced into surgery by von Langenbeck, and Professor Billroth had modified the procedure to meet the following conditions: The nasal was shut off from the pharyngeal cavity during speech not only by the application of the soft palate to the posterior wall of the pharynx, but by the action of a circular muscle, the anterior part of which was contained in the velum. This muscle acted as a sort of sphincter, and the results hitherto obtained in operations for defects in the soft and the hard palate were not quite satisfactory, owing to the fact that this sphincter was cut through when the velum was divided. In cases of extensive cleft palate there was a congenital defect not only in the bone but also in the sphincter of the velum, and if the remaining portion of this muscle was cut through, occlusion became impossible and speech was much impaired. Professor Billroth, therefore, only divided the mucous membrane at the side of the velum, and approximated the internal wings of the sphenoid to each other by means of the chisel. The mucous membrane was utilized to cover the defect, and the sphincter remained intact. Dr. Coën, of Vienna, had put the patients through some exercises of speech with considerable success, though the time was too short for really good results to be obtained. Dr. Coën made them go through some speech-exercises before the Society, and pointed out that there was special difficulty in the production of sounds in the posterior part of the oral cavity. The pronunciation of the "g" was the most difficult. Their speech was, however, generally, intelligible. Professor Exner remarked that such patients had not only to learn how to speak, like little children, but that they must also forget their previous speech; they must forget their previous innervation sensations and try to acquire new ones.—*British Medical Journal.*

A Judge's Opinion on the Use of the Title Homœopathist.—Judge George C. Barrett, of the Supreme Court of this city, sends to the *New York Medical Times*, an opinion which will be read with much interest. He was asked to give a reply to the question: "Has a physician designating himself an 'Homœopathist' and called as such to a patient, any legal or moral right to adopt other than homœopathic means in the treatment of the case?" To this Judge Barrett answers: "I have your note of the 11th inst., asking my opinion upon a question of professional ethics. In my judgment there can be but one answer to your question, and that is in the negative. If I call in a medical man who designates himself a 'homœopathic physician,' it is because I do not wish to be treated allopathically, or eclectically, or otherwise than homœopathically. There is an implied understanding between myself and the homœopathist that I shall receive the treatment which, by tradition and a general consensus of opinion, means small doses of a single drug administered upon the principle of *similia similibus curantur*. If there is to be any variation from that method I have a right to be informed of it and to be given an opportunity to decide. Common honesty demands that before a confiding patient is to be drugged with quinine, iron, morphine, or other medicaments, either singly or in combination, he should be told that the 'homœopathist' has failed, and that relief can only be afforded by a change of system. An honest 'homœopath,' who has not succeeded, after doing his best with the appropriate homœopathic remedies administered on homœopathic principles, should undoubtedly try anything else which he believes may save or relieve his patient. But when he reaches that point the duty of taking the patient into his confidence becomes imperative. The patient may refuse to submit to the other system or he may agree, but prefers a physician whose life has been specially devoted to practice under that other system. He may say to the 'homœopathist:' You have failed, but I prefer to try another gentleman of your own school, before resorting to a system that I have long since turned my back upon. Or he may say, Well, if homœopathy cannot save me, I prefer to go to headquarters for allopathic treatment. All this, gentlemen, is the logical sequence of the particular designation 'Homœopathist.'"

Hysteria in the Russian Army.—According to Dr. Ozeretskofski, of Moscow, the existence of hysteria among Russian soldiers is by no means an exceptional occurrence. The affection presents the same diversities of form that it does among women. Frequently men suffering from this affection are put down as malingerers. Other cases are looked upon as instances of serious but somewhat obscure organic disease, the true nature of the case being nearly always overlooked, because it is not generally supposed that soldiers are liable to hysteria. So real, however, does Dr. Ozeretskofski consider the existence of this male hysteria, that, having had an opportunity of studying no less than thirty-eight cases in the Moscow Military Hospital, he is convinced that hysteria ought to be recognized as one of the affections which entitle the subject of it to exemption from military service.—*The Lancet*, February 16, 1889.

The Medical Record

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Original Lectures.

THE PLANS AND PURPOSES OF THE JOHNS HOPKINS HOSPITAL.[1]

BY JOHN S. BILLINGS, M.D.,

SURGEON U. S. ARMY.

THE third paragraph of the letter of instructions communicated by Johns Hopkins to the trustees whom he had chosen to carry out his plans for a hospital in the city of Baltimore states that "it is my wish that the plan . . . shall provide for a hospital which shall, in structure and arrangement, compare favorably with any other institution of like character in this country or in Europe." What do you suppose the writer was thinking of when he penned that sentence? Had he in view any definite ideal, any mental picture of the institution which he proposed to establish, or was it merely an expression of a desire to give to his city the best thing that could be devised? I have read that letter many times, have heard much of the ideas, hopes, and wishes which were expressed in the numerous conversations which preceded its preparation, and it seems to me that the writer had an ideal, and not a mere vague desire—an ideal which was no doubt somewhat misty, but which did not correspond to any existing hospital, and one which he did not attempt to define except in a few prominent points to which I shall presently refer. In most respects Johns Hopkins took the same course with his hospital which he did with his university, and deliberately refused to trammel with specific directions those whom he had chosen to carry out his plans; but this letter of instructions indicates, nevertheless, a conception of much more definite character, and one which had been the subject of more discussion and reflection than his scheme for a university. Whether this be so or not, I am at all events sure that his trustees have endeavored to comply with this letter of instructions, and to do so in the broadest and best sense of the words.

The beginning of the results we have before us to day; results which even now are not confined to these particular aggregations of bricks and mortar, as will be presently explained, and the end of which will be, as we hope and believe, to make life happier for millions now living and yet unborn. Only those who took part in the early deliberations of those charged with this trust can fully realize the anxieties, the doubts, the manifold perplexities which at first attended their decisions and movements. Only one or two of them had any knowledge of hospital matters; most of them were business men, bankers, lawyers, judges, railway managers, men who knew something of the management of men and money, but who were now brought face to face with a new problem, viz., how to build, organize, and manage a hospital so that it should compare favorably with any other hospital in this country or in Europe.

To "compare favorably with," what does that mean? It is a peculiar phrase, which, coming from a shrewd business man and a member of the Society of Friends, signifies, I think, to excel, if possible; at all events, that is the safest interpretation. And it was not this or that hospital which was to be surpassed or equalled, but all other hospitals in this country or in Europe; Africa, Asia, and Australasia being put out of the question. It was a large contract.

The location was fixed—that had been done by Johns Hopkins, but they had to decide whether the structures to be erected should be temporary or permanent, of wood, brick, or marble, in one large building or in many, and many other like points, before even the preparation of plans could be commenced. They followed the instructions of the donor and got advice, of which a great abundance was available. They visited the large hospitals of our Eastern cities, employed five men, supposed to be skilled in hospitals, each to write an essay giving his plans and suggestions, published these essays in a book which had a wide circulation, and studied the criticisms and reviews to which this book gave rise.

Having duly considered the multifarious and widely divergent suggestions thus obtained, they finally selected one of the essay-writers and asked him if he was satisfied with his own plans now that he had seen the others and the published criticisms upon them. He promptly said that he was not, whereupon they asked him to try again and do better. He set to work, aided by the architect of the Board, and the result was a set of sketch plans which he took abroad and obtained much counsel and criticism on, examining at the same time the model hospitals of Europe. He was much less satisfied with the sketch plans when he came back than he was when he started, and again the Building Committee, the architect, and himself reviewed the whole matter, and finally settled on the general arrangement which you will see to day. Many details remained to be worked out; even the façades had not yet been designed; but the general scheme was settled, and the rest was comparatively easy for the time being.

Let us now, for a few moments, consider the broad general principles which governed the trustees in the adoption of this plan. The first hospitals were established to give shelter and food to the sick poor, especially those who gather in cities. Gradually physicians found that they could learn much in these aggregations of suffering, and that they afforded means of teaching others; but this last use of them is only about two hundred years old. Gradually, also, it came to be known that the knowledge thus obtained in the care of the sick poor was of use in treating the diseases of the well-to-do; and, finally, within the last twenty-five years or so, people are beginning to find out that when they are afflicted with certain forms of disease or injury they can be better treated in a properly appointed hospital than they can be in their own homes, no matter how costly or luxurious these may be. ' In the hospital they can have not only all the comforts of home, but more; not only skilled medical attendance and skilled nursing, but the use of many appliances and arrangements specially devised for the comfort and welfare of the sick which can hardly be found in any private house, and also freedom from noise and many petty annoyances, including in some cases too much sympathy and in others too little. This hospital, then, is to provide for the rich as well as for the poor; for those who can, and ought to pay for the help given as well as for those who cannot.

A second cardinal principle to be observed in such a hospital as this, is that it shall do as little harm as possible. A hospital may do harm by its foul air, by spreading contagious disease among its inmates, by neglect or

[1] An address delivered at the opening of the hospital, May 7, 1889.

carelessness of its nurses or attendants; and in years gone by hospitals have, no doubt, caused nearly as much sickness as they have relieved. This is now rarely the case, and in this hospital the arrangements for ventilation, isolation, and nursing are such as to entirely do away with this danger. There is another danger connected with free hospitals and dispensaries which is of quite a different kind and to which I can here only allude—namely, the danger of promoting negligence, shiftlessness, laziness, and vice by offering free relief from their consequences—the danger of pauperizing people. This is a danger connected with organization and management rather than with construction, and I can only say here that it has been foreseen, and will be, as far as possible, guarded against.

The third principle to be kept in view in such a hospital as this, is that it should provide the means of giving medical instruction, for the sake of the sick in the institution as well as of those out of it. It is well known to those familiar with the subject that the sick in a hospital where medical instruction is given receive more constant, careful, and thoughtful attention than do those in a hospital where no such instruction is given. The clinical teacher must do his best; keen eyes will note every error in diagnosis, every failure in results of treatment. Moreover, the very act of teaching clarifies and crystallizes his own knowledge; in attempting to explain, the dark places become prominent and demand investigation, and hence it is that those cases which are lectured on receive the best treatment. I need say nothing here on the other side of the question, the value of properly trained physicians to the community and the necessity for hospital instruction in such training. Johns Hopkins understood all this and specially directed that "in all your arrangements in relation to this hospital you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the medical school of the university."

Now there are medical schools and medical schools, and in obeying this direction of the donor the trustees had to consider what sort of a medical school this school of the university was likely to be. As the majority of the trustees were also trustees of the university, they knew well the principles which underlie the organization of that institution and that the same principles would govern the organization of the medical department when that came to be taken in hand. One of these principles is the thorough teaching of that which is known, another is to increase that which is known, and to furnish the men and means for doing this. So also the hospital should not only teach the best methods of caring for the sick now known, but aim to increase knowledge and thus benefit the whole world by its diffusion. Another point which had to be kept in view was the direction of Mr. Hopkins that there should be established, "in connection with the hospital, a training school for female nurses, not only to care for the sick in the hospital but to benefit the whole community by supplying it with a class of trained and experienced nurses."

It is also highly desirable that a hospital of this kind should have connected with it a well-appointed dispensary for the treatment of those who need medical aid but not a bed in the hospital. Through such a dispensary much good can be done at small cost, the selection of proper patients for the hospital is facilitated, the means of medical investigation and teaching are greatly extended, and the scope of the nursing system can be made to reach the poor and ignorant in their own homes.

The last point to which I shall refer, which was kept in view by the trustees in deciding upon the plans, was the general appearance of the buildings and grounds.

Mr. Hopkins gave no specific directions as to the buildings, but he directed that the grounds should be properly enclosed by iron railings, and so laid out and planted as to be a solace to the sick and an ornament to the city, and it was evident that the buildings should be of the same character so far as their purpose would admit. It was therefore decided that, while no utility should be sacrificed for the sake of architectural ornament, and the main purpose which I have referred to should be fully worked out in the plans before any attention was paid to external appearance, it was fit and proper that the buildings should form an ornament to the city, and a suitable monument to the memory of the donor.

Bearing in mind, then, these main principles, to provide for the proper care of the sick, both rich and poor, to provide for the highest class of medical education, to increase and diffuse knowledge, to provide trained nurses for both hospital and city, to provide a dispensary, and to make the buildings and grounds ornamental and attractive, let us see how the problem has been thus far worked out.

I will begin with the arrangements for securing that article of prime necessity in a hospital, viz., pure air. Air-supply and ventilation in this climate are inseparably connected with heating for a considerable portion of the year, for comfortable warmth must be secured, and on the means of doing this must largely depend the methods of ventilation and their success. The temperature of Baltimore may vary from 103° in the shade to 17° below zero, F., hence its perfect hospital must be one which would answer for the tropics or for Northern Russia. To secure this, double walls, with air-spaces, were given to the buildings, and a system of heating by the circulation of hot water was adopted for the wards. This system consists of central boilers, from which flow and return pipes extend beneath every building, connected with heating coils, of which there is one for every two beds in the ward above. The temperature in these coils can be exactly regulated to any temperature between 150° F. and the temperature of the external air by simply regulating the velocity of the flow of water by the valves attached to each coil, and thus it is quite possible to give one pair of beds a temperature of 70° and another pair in the same room, at a little distance, a temperature of 60° F., to suit the needs of different cases. The 80,000 gallons of water contained in this heating apparatus go round and round, carrying heat from the furnaces to the wards, but every building has its own independent means of ventilation, and it is not possible to go from one ward into another without going into the open air on the way, so that foul air, if any forms, cannot spread from one building to another. Nevertheless, the buildings are so connected by corridors and underground tunnels that in passing from one to another there is no exposure to rain or snow, and the least possible to cold air, while the food is not exposed at all. This is not the place to describe the ventilation. I will only call your attention to the fact that the temperature of the incoming air by any bed is easily changed by turning a valve, while the quantity of air is not changed; to the arrangement for taking foul air from either the bottom or top of the ward, or from both, and to the fact that all this has been thoroughly tested during two winters and found to give the results hoped for.

One of the peculiarities of the wards is that all the service rooms are collected at the north end, leaving the south end free of obstruction and fully exposed to the sun, the end of the ward being a large bay window looking out on the central garden, and with a floor which can be warmed so that the patients able to sit there can be thoroughly comfortable. Another peculiarity of the sick wards is the arrangements for easy cleansing, and to prevent possible accumulations of dust in corners and crevices. Corners are to a great extent done away with, and easy curves given in their place; even at the junction of the floor and walls there is a curve instead of the usual right angle, and I advise you to look at it and see how it has been produced, for it ought to become fashionable, and take the place of the old mop-board in all well-constructed houses. So, also, the doors have not the usual moulding about the panels, giving recesses which it is almost impossible to clean.

One of the wards is especially arranged for cases which may be either contagious or offensive. In this building each patient is in a room by himself, and all these rooms open into a corridor through which the wind is always blowing. There are many details about this isolating ward which are worth looking at, but which I have not time now to refer to, and I must omit details about the pay ward, the octagon ward, and the peculiar fittings and conveniences of the kitchen, laundry, apothecaries' building, etc., for the same reason.

Let us pass now to the second object of the hospital, the giving means for higher medical education, and see what has been done for that. In the first place, there is a large amphitheatre with appended rooms for the reception of accidents and emergencies of all kinds. In the second place, provision is made for at least thirty students to reside constantly in the hospital, and devote themselves under proper guidance to the study of disease and the practical care of the sick. It is intended that these places shall be open only to those who have had a thorough previous training, and who have shown themselves to be fitted to undertake this important part of their studies. As a rule, not more than five per cent. of medical graduates have had any opportunities worth speaking of to study and treat diseases in the living man when they receive their diplomas. They have to get this experience on their first patients, and sometimes the experience is rather hard—for both doctor and patient. This hospital has provided for the class of the medical school in the last year of their studies good rooms with bath-rooms, a dining-room, and other conveniences, and here they can be taught the actual daily work of a physician, for which all their previous studies are only preparatory. Many of the arrangements of the hospital have been made with reference to this instruction; it is a great laboratory for teaching the practical applications of the laws of hygiene to heating, ventilation, house-drainage, and other sanitary matters. All pipes and traps are either exposed to view or can be seen by merely opening a door, and in the tunnel beneath the corridor you can study at your leisure the complicated and yet simple arrangement of pipes for gas, steam, water, sewage, etc., which are usually buried and remain a profound mystery to everyone except the plumber, and often puzzle even him.

Closely connected with this subject of teaching is that of increasing our knowledge of the causes, symptoms, results, and treatment of disease; in fact, one cannot be thoroughly and well done without the other, and hence many of the provisions for the one are also useful for the other. For example, to go back to our system of heating and ventilation, there are many points connected with it which are destined for experimental work, to compare steam with hot-water heating, to determine the velocity of water at different temperatures, to compare ventilation by aspiration with that by propulsion, or by upward currents with those drawn downward.

One structure is very largely devoted to and fitted for experimental research, and that is the pathological laboratory, where the causes, processes, and results of disease are to be studied. Upon the results obtained in that laboratory may yet depend the saving of many lives, the relief of unspeakable agony, the warding off of pestilence from the city, and, to put it in a strictly business light, the value of real estate and the rate of taxation of this community. We are on the verge of great advances in our knowledge of the causes and methods of disease, and I feel sure that these will be only preliminary steps to far greater and better knowledge of how to prevent or to treat them than we now have. The probable length of life of the new-born infant to-day is not much more than half what it ought to be; the practical productive period of the life of our men and women is shortened and interrupted by unnecessary disease and suffering; but remember, if these things are to be amended, it is not merely by teaching old doctrines; we must open fresh windows and let in more light, so that we can see what these obstacles really are. It is in this work of discovery that it is hoped that this hospital will join hands with the university, and it is in this hope that some of the structures around you have been planned and provided.

A word now on the fourth object kept in view in this hospital, viz., the Training School for Nurses.

Some of you probably have had some personal experience of the difference between an educated, properly trained female nurse, and one of the old-fashioned sort, but if you have not, it would take much more time than I now have to describe it. I can only say, that in many cases a competent trained nurse is as important to the success of treatment as a competent doctor, and that one of the greatest difficulties in treating well-to-do patients in their own homes in this city is the want of proper nurses. Affection and zeal may do much, but they cannot take the place of knowledge, and this kind of knowledge is not to be acquired in a day or in a month. It is a work best carried out by women, though not one woman in ten is fit for it, or should undertake it. But the woman who is fit for it, who has physical health and strength, sound sense, loving kindness, patience and tact, and who has been thoroughly taught the art of nursing the sick, with all its thousand details, has the power of doing good and increasing happiness to a degree which few others possess. In a properly conducted hospital ward she is a necessity, but her field of usefulness and helpfulness is by no means limited to that. She is needed outside the hospital, in the home of the rich, to nurse and care for the sick; in the home of the poor, to teach prevention as well as nursing. To gather here such women, to have them thoroughly instructed, to furnish them with the attractive and comfortable home which they deserve, and to send them where they are most needed, with provision for their return when the work is done, is the object of the training school of this hospital.

For this purpose the trustees have provided a large and handsome building, separated from the others, and exclusively appropriated to the female nurses, where each can have her own comfortable room, and where a common parlor, library, dining-room, bath-rooms, and, in short, the arrangements of a first-class hotel are provided for their use. Here also is a training-kitchen and a lecture-room to aid in the work of instruction. The intention is that when the nurse has finished her six or eight hours' tour of duty with the sick, she shall come quite away from the ward and all that pertains to it, and take her rest and recreation in a totally different atmosphere, and special effort has been made to have this home attractive and pleasant.

The fifth object which I mentioned as having been kept in view in the plan and construction of these buildings is the Dispensary. This is a large building on the north front, consisting of a large central waiting-room, surrounded by a number of smaller rooms for the use of the physicians and surgeons who are to examine and prescribe for the patients, and having bath-rooms, and a small apothecaries' establishment for the issue of the medicines ordered. This building is connected with the amphitheatre by a short covered corridor, and is specially arranged with reference to teaching. It, as well as the amphitheatre, is heated by steam instead of hot water, partly because they are not in constant use, and a rapid means of warming is desired, partly for the purpose already referred to, of giving the means of experimental comparison of the two systems. The means of supply of fresh warm air in these two buildings, and of removing the air made impure by exhalations, are somewhat peculiar, and merit examination.

With regard to the architectural design and external appearance of the buildings, and the laying out and ornamentation of the grounds, I can only say that you must see and judge for yourselves whether Mr. Hopkins' wish that they should be an ornament to the city have been

successfully complied with. So far as external ornamentation is concerned, it is confined almost entirely to the large buildings on the west, or Broadway, front, which it was felt should harmonize in style of decoration. These central buildings, consisting of the administration, with the one pay ward on either side, are constructed of pressed brick with ornamentation of a dark blue, fine-grained, hard, and durable stone, known as Cheat River stone, and of moulded terra-cotta of the color of the brick. The external designs for these, as for all the other buildings, were furnished by Messrs. Cabot & Chandler, of Boston, and I think we have good reason to be well satisfied with the results they have produced. The grounds are laid out and planted in accordance with designs furnished by Mr. E. W. Bowditch, of Boston.

As regards construction, I do not hesitate to affirm that these are the best built buildings of their kind in the world. The material is the best, the most skilled and careful workmen were employed, and, above all, the work received the most careful, conscientious, and intelligent supervision as it progresssd. For this supervision we are indebted to Mr. John Marshall in the beginning, and to Mr. William H. Leeke for the remainder and conclusion of the work; and we are also indebted to the latter for many valuable suggestions as to modes and details of finish, which are so important in a hospital. The details of the complicated and extended system of heating, ventilation, and plumbing were designed and the work executed by Messrs. Bartlett, Hayward & Co., of this city. I should like to go on and mention a number of other names of persons who have done good work here, but want of time forbids. I will only say that these buildings embody the counsels and suggestions of many men and women in this country and abroad, but among them all there is no one who, from the very beginning of the conception of the idea of this magnificent gift in the mind of Johns Hopkins down to this present moment, who has had more to do with shaping the results, who has furnished more valuable suggestions, who is more thoroughly acquainted with all that has been done, and why it has been done, who has worked so unselfishly, and who more deserves honor in this connection, than the President of the Board and Chairman of the Building Committee through the whole progress of the work, Mr. Francis T. King.

Briefly and incompletely as I have sketched these salient points of the plans and purposes of this hospital, I hope I have, nevertheless, shown you that it is intended for other purposes beside providing shelter, food, and drugs for the sick. In saying this I have not the least wish to undervalue or disparage those institutions which do make this their main or only object. There is abundant need of their existence and work also; but this institution should not be judged by the rules which apply to them; it cannot be managed after their fashion; if it does not produce results different from theirs, it is a failure and the expenditure upon it a mistake.

Thus far I have been speaking of the buildings only, and trying to give you some idea of the motives which led to their being as they are, and what they are, and not otherwise. From the beginning, however, it has been recognized that the buildings and machinery are only means to an end, tools which must be handled by skilled workmen to produce the desired results; and throughout all these years of planning and building, the question of organization and of the sort of men and women who were to use and work with these things have not been lost sight of. It is true that no attempts were made to select and engage individual members of the hospital staff until quite recently; but there was, nevertheless, a tolerably definite conception as to the ideas, mode of work, character, and wants of those who are to constitute this staff, and when the time came for selecting, it was made by this standard.

On the philanthropic, social, and religious aspects of this great trust I do not propose to touch, but I wish to say a very few words of the hopes and wishes of scientific men and physicians with regard to it. From the time of the first announcement of the Hopkins bequests to the present, these men, all over the world, have been keenly interested in the plans and methods adopted in carrying them out. Whenever and wherever the problems of higher medical education have been discussed within the last ten years, there has been speculation as to the probable course of the Johns Hopkins medical department, and the influence it would have upon the standard. I may even say that some of this influence has been exerted in advance, has been discounted, as it were, for the plans of this hospital have stimulated changes in some of our best medical schools, and have been copied with more or less modification in some of our latest hospitals.

What is it, then, that the physicians want? Is it more physicians, more family practitioners, more surgeons, more specialists? Not at all. They know very well that there is no danger that the supply will not be equal to the demand; when they become overburdened with practice they do not at present find it difficult to obtain assistants; they have no fear lest the seventy or eighty medical schools of this country should fail to produce a sufficient number of medical practitioners to meet the wants of our increasing population; and they know also that medical schools of Great Britain and Germany are sending to us quite as much of their product as we can conveniently dispose of. They hope that the Hopkins medical school and hospital will do two things. The first is, that it will demand of those who propose to become its students evidence that they have a sound basis of preliminary education before they commence, and that its standard in this respect shall be little below that of the requirements for granting the degree of bachelor of arts in the University. It is hoped that the men thus selected will go through a carefully graded course of study, including actual work in properly fitted laboratories, and that after this they will be brought into contact with the sick, and thus obtain practical experience of the duties and responsibilites of the practitioner of medicine before they offer their services as such to the public.

So much our physicians desire of every medical school, for the sake of the honor and dignity of the profession, and for the good of the public, and they desire especially that this school shall form an example to which they can point as showing how medical education should be conducted, and what should be required of the candidate for the degree of doctor of medicine.

The very general interest in the combined Hopkins trusts felt by physicians and scientific men, not only of this country but of the whole civilized world, is largely due to the belief that the relations which will here exist and be maintained between the University as a whole and its medical department, of which this hospital is to be an important part, will be close and intimate, so that the true University spirit will pervade, stimulate, and encourage the hospital work. In this country medical schools have either had no connection with universities properly so called, or the connection has been slight and nominal, such as depends upon the formal conferring of medical degrees by the University. Here, however, through the influence of the biological department, there are secured common interests and mutual influence, and it is hoped, therefore, that the necessary details of technological instruction will be arranged in accordance with, and subordinate to, the broad principles of scientific culture upon which this University is organized.

It is because it is believed that this will be the case that there is a widespread hope and expectation that these combined institutions will endeavor to produce investigators as well as practitioners, to give to the world men who can not only sail by the old charts, but who can make new and better ones for the use of others. This can only be done where the professors and teachers are

themselves seeking to increase knowledge, and doing this for the sake of the knowledge itself; and hence it is supposed that from this hospital will issue papers and reports giving accounts of advances in, and of new methods of acquiring, knowledge, obtained in its wards and laboratories, and that thus all scientific men and all physicians shall share in the benefits of the work actually done within these walls. But, however interesting and valuable this work may be in itself, it is of secondary importance to the future of science and medicine, and to the world at large, in comparison with the production of trained investigators. full of enthusiasm, and imbued with the spirit of scientific research, who will spread the influence of such training far and wide. It is to young men thus fitted for the work that we look for the solution of some of the myriad problems which now confront the biologist and the physician.

Do I seem to ask too much? to be too sanguine as to what human thought, and study, and skill may accomplish? to forget that there is one event unto all; that the shadow of pain and death comes on the wise man as on the fool? I have two answers. As surely as our improved methods of prevention and treatment, based on the advances in knowledge of the last fifty years, have already extended the average duration of life in civilized countries nearly five years, have prolonged thousands of useful and productive lives, and have done away with the indescribable agonies of the preanæsthetic period, so surely we are on the verge of still greater advances, especially in the prevention of infectious and contagious disease, in the resources of surgery against deformities and morbid growths, and in the mitigation of suffering due to causes which cannot be wholly removed. But the second answer is more important, and it is this: It is our duty to try to increase and diffuse knowledge according to the means and opportunities which we have, and not to rest idle because we cannot certainly foresee that we shall reap where we have strewn. "It is not incumbent on thee to finish the work, but thou must not therefore depart from it," says the Talmud, and "Of him to whom much is given much shall be required," says the Scripture.

To you, the officers of this institution, and to you, men and women of Baltimore, there is now given the opportunity of giving powerful aid in this increase and diffusion of knowledge of the laws of human life, disease, and death. Surely, those who are working in the wards and laboratories of the hospital and University will do their best; surely, also, the citizens of this great city of a great nation, which at no distant day will take the lead in scientific work, will encourage, sustain, and sympathize with these workers. I would have this hospital become famous, not for fame's sake, but because this will be evidence of the good work which has been done in it. But we must not be impatient. There are difficulties to be overcome, delays which must be submitted to. We cannot at once have the medical school which is essential to the plan which I have sketched; but there is plenty to do for the present, and I am certain that in time all these present obstacles to full development will be happily overcome.

Success in this, as in all other enterprises in this world, is to be obtained by unselfish work for the good of others, by wise counsel, by co-operation, and by persistent effort.

A hospital is a living organism, made up of many different parts, having different functions, but all these must be in due proportion and relation to each other, and to the environment, to produce the desired general results. The stream of life which runs through it is incessantly changing; patients and nurses and doctors come and go; to-day it has to deal with the results of an epidemic, to-morrow with those of an explosion or a fire; the reputation of its physicians or surgeons attracts those suffering from a particular form of disease, and as the one changes so do the others. Its work is never done; its equipment is never complete; it is always in need of new means of diagnosis, of new instruments and medicines; it is to try all things and hold fast to that which is good.

"Et quoniam variant morbi, variabimus artes."

It has been said that "hospitals are in some sort the measure of the civilization of a people, but a hospital of this kind should be more than an index. It should be an active force in the community in which it is placed. When the mediæval priest established in each great city in France a Hôtel Dieu, a place for God's hospitality, it was in the interests of charity as he understood it, including both the helping of the sick poor and the affording to those who were neither sick nor poor an opportunity and a stimulus to help their fellow-men; and doubtless the cause of humanity and religion was advanced more by the effect on the givers than on the receivers. It is the old lesson so often expounded, apparently so simple and yet so hard to learn, that true happiness lies in helping others; that it is more blessed to give than to receive.

In some respects we of to-day have a much wider outlook than the men of a thousand years ago. This hospital is designed, as I have told you, to advance medical science as well as to give relief to the sick poor, but the fundamental motive is the same—to help others.

We have here the beginning of an institution which shall endure long after the speakers and the audience of to-day shall have finished their life-work and have passed away. Founded in the interests of suffering humanity, intimately connected with a great university, amply provided with what is at present known to be essential to its work, we have every reason to predict for it a long and prosperous career, with steadily progressing improvement in its organization and methods, and enlargement of its activity and influence.

Let us hope that before the last sands have run out from beneath the feet of the years of the nineteenth century it will have become a model of its kind, and that upon the centennial of its anniversary it will be a hospital which shall still compare favorably, not only in structure and arrangement, but also in results achieved, with any other institution of like character in existence.

Dislocation of the Eyeball.—A singular case of dislocation of the eyeball is related by Dr. Van Dooremaal in the *Dunders Fest Bundel*. A butcher's assistant, in passing out of the shop, caught his upper eyelid on one of the hooks. He begged his fellow-shopman to extricate it for him, but the latter performed his task so awkwardly that the hook pushed the eye forward, and allowed both upper and under eyelid to disappear completely behind it; even the eyelashes were invisible. The man was brought to Dr. Van Dooremaal. The eye was pushed frightfully forward. The man shrieked incessantly, "Oh, how strong the light is;" and on being asked whether he was in pain, replied: "Yes, but oh, that light, that light!" while he clasped his hands convulsively over his eyes Dr. Van Dooremaal decided to enlarge the external angle of the eyelids by means of blunt-pointed scissors, which were introduced between the protruding eyeball and the outer angle. After the cut had been made, a strabismus hook was introduced along the under edge of the upper eyelid. As soon as the hook had been pushed somewhat inward under the upper eyelid, a curette was inserted, and then pressed outwardly without exerting pressure on the eyeball, so as to bring the upper lid out. This was accomplished without difficulty, and then the under lid was gently drawn back to its place by the thumb. The wound was sewn up as usual, and the eyes bandaged. The wound healed quickly; the reaction was extremely small, but the patient complained of excess of light on the removal of the bandage. The discomfort, however, soon disappeared, and the sight was normal. —*British Medical Journal.*

Original Articles.

THE SIGNIFICANCE OF THE CREPITANT RÂLE.[1]

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In "A Manual of Auscultation and Percussion," by the late Dr. Austin Flint, fourth edition, 1885, we find this statement:

"The crepitant râle is the diagnostic sign of pneumonia. It very rarely occurs in any other pathological connection. Of all respiratory signs this is most entitled to be called pathognomonic. . . . The practical value of this sign relates chiefly to the diagnosis of pneumonia" (page 133).

To this theory, which is held by many, I venture to take exception, and it is in the hope of provoking discussion to-night that I bring this subject forward.

My position is, that the crepitant râle alone is *not* diagnostic of pneumonia; that it is simply a sign of inflammation involving the pleura, and possibly of several abnormal conditions of the lungs as well.

A certain degree of difference is to be noted in the definition of the crepitant râle by various writers, but all practically follow the teachings of Laennec or Walshe. Laennec[2] describes this râle under the title of "La râle humide, ou Crépitation." He says: "The moist crepitant râle is a sound which evidently occurs in the pulmonary tissue. One may compare it to that made by salt when caused to decrepitate in a vessel over a gentle fire, or to that given out by a dried bladder when blown into, or, better still, to that given forth by the tissue of a healthy lung distended with air when one presses it between the fingers. Only it is a little louder than this last, and beyond the crepitation it carries with it a well-marked sensation of moisture. One plainly perceives that the pulmonary vesicles contain a liquid almost as thin as water, and which does not prevent the air from entering. The bubbles which it forms appear extremely minute."

Here it will be noted that the râle is spoken of as *moist*.

Walshe[3] calls it "a crepitating (or crepitant) rhonchus," which, he says, "when developed in perfection occurs in puffs more or less prolonged, but rapidly evolved, composed of a variable, sometimes immense, number of sharp, crackling sounds, all perfectly similar to each other; conveying the notion of minute size; dry; co-existing exclusively, except in rare cases, with inspiration, and, once established, remaining a persistent condition until superseded by other phenomena. . . . Dryness is one of the best-marked acoustic properties of true crepitation. The sensation is not that of bubbles bursting, but rather that of a delicate tissue undergoing minutest ruptures with a crackling noise at many points simultaneously. . . . When at its maximum, crepitant rhonchus accompanies almost the entire act of inspiration; when first developed, and also when about to be superseded by blowing respiration, it appears toward the close of inspiration only. Under all circumstances it is, to say the least, rare to find this rhonchus co-existent in any degree with expiration."

It will thus be noted that in an acoustic property attributed to this râle these two authorities differ very widely; the one dwelling upon the element of moisture, the other on the extreme dryness of the sound. It has seemed to me that, as usual, both are right. That taking the crepitant râle, even as heard in pneumonia, the sound may at one time be quite moist and again quite dry. Such a variation I have noted occasionally in the same case of pneumonia on different examinations, and frequently in cases of dry pleurisy. If the seat of the crepitant râle in these cases be attributed to the pleura, the explanation of the varying degree of moisture or dryness of the sound is to be found in the varying amount of serum contained in the fibrin on the pleura or in the meshes of the adhesions. It also seems to me that there is another important variation in the character of the sound, viz., in the degree of *fineness* of the râle; some râles are much coarser and of more volume than others, although still a fine râle and heard only on inspiration.

As regards the mechanism of the crepitant râle there are now three leading theories which are offered in explanation of the sound:

That of Laennec, that it is due to the bursting of fine bubbles of air through a viscid fluid in the air-vesicles or alveolar passages of the lungs.

That favored by Walshe, that it is due to forcible distention of air-vesicles, whose walls are rendered stiff, or are "starched," by a glutinous exudation.

Finally, the theory so ardently advocated by Dr. James R. Leaming, that the crepitant râle is not produced in the lung, but by the rubbing together of the two surfaces of an inflamed pleura which are coated with fibrin, or by the stretching of adhesions of the pleuræ.

In order to gain some idea as to the general sentiment of writers in regard to the significance of this râle, I have hastily consulted a few of the acknowledged authorities upon this subject. The general result of such investigation is, that all writers, up to a few years ago, believed the crepitant râle to be pathognomonic of lobar pneumonia in its first stage. That among recent writers most of those in Germany and France favor the intrapulmonary origin of the râle, and consider it a valuable sign in the diagnosis of pneumonia; but, at the same time, ascribe the râle to other pathological conditions of the lung as well; and that while most of the English writers follow the teachings of their German brethren, the fact that pleural changes will produce a crepitant râle is recognized by several; while in this city, at least, many of the more recent writers and teachers ascribe the râle to pleuritic exudation. Nearly all modern writers agree, however, that the crepitant râle is *not* pathognomonic of pneumonia.

Thus Guttmann[1] states that the proper diagnostic inference from the crepitant râle is simply that the alveoli contain both air and fluid, and that this condition occurs in the most pronounced form in the first and third stages of pneumonia. He thinks that the conditions are also present in œdema of the lung, for the production of the râle; but there being fluid in the bronchi as well, a coarser râle is added. Eichhorst[2] makes the same statement, except as regards œdema of the lung, in which he considers that a crepitant râle is heard.

Juergensen,[3] while regarding the râle as a valuable sign in pneumonia, denies that it is pathognomonic. He states that it is also heard in beginning œdema of the lung; in collapse of some air-vesicles at the bases of the lung after prolonged decubitus, and sometimes, though rarely, in cases of "pleuritic exudation unaccompanied by pneumonia."

Germain Sée[4] regards the crepitant râle as the characteristic sign of inflammatory engorgement of the lung, and also draws attention to the fact that sometimes the râle is not heard until the respiration has become bronchial, *i.e.*, the stage of consolidation. He does not attempt to explain the mechanism of the râle in this latter condition of the lung, which can neither be due to the distention of the already over-distended air-vesicles, nor to the passage of bubbles of air through tissue now impervious to air. He, perhaps unconsciously, indicates the explanation, however, a little further on, when he directs us to search carefully

[1] Read before the Section in Practice of Medicine, New York Academy of Medicine, April 16th.

[2] Traité de l'Auscultation médiate, tome i., pp. 96, 97. Paris, 1826.

[3] Diseases of the Lungs, fourth edition, pp. 109, 110. London, 1871.

[1] Handbook of Physical Diagnosis, New Sydenham Society, Translation, pp. 151, 152. 1879.

[2] Handbook of Practice of Medicine, pp. 299, 280. William Wood & Co., 1886.

[3] Ziemssen's Cyclopædia of Practical Medicine, vol. v., pp. 83, 84. William Wood & Co., 1875.

[4] Diseases of the Lung, p. 100. William Wood & Co., 1885.

for the crepitation "first at the level of the seat of pain." This pain we know to be caused by the inflamed pleura.

In "Quain's Dictionary of Medicine,"[1] 1884, it is stated that there are at least four conditions which will give rise to the crepitant râle; namely, incipient pneumonic consolidation, œdema of the lungs when not excessive, mere temporary collapse of some air-vesicles, and certain cases of œdema of the pleura dependent upon old lung disease.

W. Douglas Powell[2] says: "The fine crepitation of pneumonia is exactly imitated by other conditions: pulmonary collapse from disease, certain degrees of pulmonary œdema, œdematous pleura, and the first stage of pulmonary apoplexy may be instanced as several circumstances in which the sound may be produced." He thinks that the application of the term "dry" to the sound, while acoustically correct, is peculiarly misleading, for moisture of tissue is probably one of the conditions essential to its production. "Thus, the sound may be most typically heard over a pleura, the two layers of which are separated by œdematous cellular tissue, a condition commonly found over old contractile lung consolidations."

Samson Gemmell[3] holds practically the same views as the above. He says, "certain forms of pleuritic friction often closely resemble it" (the crepitant râle).

Sir Andrew Clark,[4] in his admirable series of lectures, on "Some Points in the Natural History of Primitive Dry Pleurisies," distinctly refers the fine râles which he hears to changes in the pleura and not in the lung, and verifies his statements with autopsies. It is but fair to state, however, that he does not mention whether these râles are crepitant or subcrepitant.

Turning now to writers and teachers in our own country, we find that for a number of years Dr. Leaming has been untiring in his advocacy of the, till then novel, doctrine of the interpleural origin of râles. At first his teachings met with a storm of opposition, but many of his arguments are so good, and many of his cases with autopsies so convincing, that little by little his views have been accepted, in part at least, by a large number of the profession. I say in part, for I doubt if there be many who dare accompany him the whole way, and regard all fine râles as having their seat in the pleura alone. It is particularly the crepitant râle which is accepted as having its origin in the pleura, and it is that alone which concerns us to-night.

Dr. Leaming bases his argument for the pleuritic origin of the râle in pneumonia, apart from theoretical considerations, which we will not discuss here, on the presence of fibrin on the pleura in these cases, and the very significant fact that râles were heard shortly before death when the lung was found to be completely consolidated upon autopsy. Here it is obvious that no air could enter the air-vesicles to distend them, or to produce bubbles in a viscid fluid. He says:[5] "More extended experience has proved to me that the seat of crepitant râle is almost always interpleural. . . . Centric pneumonia, without interpleural plastic exudation, is unaccompanied with râles, either crepitant or subcrepitant, nor is there bronchial breathing. And, again, crepitant râles may exist without pneumonia, as when interpleural adhesions are very close, and do not allow of but slight movement of the lung almost at the end of forced respiration, when there will a little shower of crepitant râle."[6]

He believes the râle to be "a valuable sign of pneumonia or of phthisis, as it often accompanies these diseases; but it is not pathognomonic. It may exist in the absence of both, and either may be present without crepitant râles." He denies that this râle is heard in œdema of the lung.[7]

[1] Article, Physical Examination, p. 1189.
[2] On Diseases of the Lungs and Pleura, including Consumption, pp. 40, 41. William Wood & Co., 1886.
[3] Clinical Diagnosis, Finlayson, 2d edition, p. 555. 1886.
[4] Lumleian Lectures, Brit. Med. Journal, 1885, vol. i., p. 633.
[5] Diseases of the Chest, p. 28. New York, 1887.
[6] Loc. cit., p. 98.
[7] Loc. cit., p. 100.

The views of the late Dr. Flint have already been mentioned.

Dr. Loomis states[1] that as soon as the congestion is well marked in pneumonia crepitant râles are heard, "which have been regarded as characteristic of the first stage, but which are usually pleuritic crepitation." He regards the râle of œdema of the lung as a subcrepitant râle.[2]

Dr. Delafield teaches that the crepitant râle is heard in pneumonia, in phthisis, and in dry pleurisy, and that it is probably a pleuritic-friction sound. Differing somewhat from other writers, he teaches that the stage of congestion in pneumonia may give a *sub*-crepitant râle and a crepitant râle, if there be pleurisy early, and that the crepitant râle may persist in the stages of complete hepatization, if the lung move enough. Of course the râle may be heard during the stage of resolution.

Dr. Roosevelt[3] attributes the crepitant râle to the three possible causes before mentioned, and regards the rubbing together of inflamed pleural surfaces as the most common cause; he thinks it "not unlikely that this is really the only cause." It is heard in pneumonia, in broncho-pneumonia, in pleurisy, and in phthisis.

Dr. S. S. Burt[4] thinks that this râle probably originates in the pleura.

In relating my own experience and opinions in regard to the crepitant râle, I am only too well aware of how little I have to offer in scientific corroboration of my statements. The exact study of the phenomena of râles demands that the râle shall have been heard at the shortest possible period before death, its position on the chest-wall carefully marked, and its acoustic characters equally carefully noted, and then that the lungs and pleura be subjected to a careful post-mortem examination with reference to these data. Thus far I have been able to conform to these requirements in but a few instances, and, consequently, I have not yet acquired sufficient statistics to be of any real value. In the work so far done I have been greatly assisted by Dr. Roosevelt, the assistant pathologist of Roosevelt Hospital, who has kindly examined the pleuræ of such cases for me. In general terms it may be said, however, that where a fine râle was heard on inspiration, some pleural changes were commonly noted at or near the site of the râle, but not always of such a character as to be convincing.

From a strictly clinical stand-point, however, I have studied the phenomena of crepitant and subcrepitant râles for several years with considerable care, and it is from this stand-point alone that I venture to speak with any degree of confidence. As a result of such experience I would note some exceptions to the general statements in regard to the crepitant râle.

The râle is not always persistent when once established. Frequently it has been plainly heard, and a few moments later found to be entirely absent, only to return in a few moments again. This phenomenon has often been observed by other physicians examining cases with me, and by my students. It is my experience that the extremely fine, extremely dry sound, occurring in a great number of crackles, is a rare form of the crepitant râle, whether associated with pneumonia or any other pathological condition. The extremely dry and extremely fine râle is heard commonly enough, but it does not occur in a shower of crackles; there are heard, perhaps, from six to twelve crackling sounds over a given area, and usually these sounds are not very loud, and sometimes they require the most careful examination to recognize them. They have been most frequently heard in cases of old dry pleurisy, or late in the stages of consolidation in pneumonia. Of the brilliant, explosive, abundantly crackling type of crepitant râle, that which is slightly moist and a trifle more coarse in quality seems to me to be far more com-

[1] A Text-book of Practical Medicine, p. 89. New York, 1884.
[2] Loc. cit., p. 118.
[3] Ref. Handbook of the Med. Sciences, Article Râles, vol. vi., p. 145. New York, 1888.
[4] Exploration of the Chest, p. 73. New York, 1889.

mon. Such a râle I have frequently observed in three conditions, viz., in acute lobar pneumonia, in acute dry pleurisy, and in phthisis. Much less frequently I have observed it in broncho-pneumonia. In not one of the above conditions could it be told, by the râle alone, whether one had to do with a case of pneumonia or not. It may be mentioned, as an example, that for several weeks I was in the habit of showing to my students a man, who was a regular attendant at the hospital out-patient department, as a case with a typical crepitant râle. Yet at no time did he have a temperature of more than 100° F., he had but slight cough, and no bronchial voice or breathing. He did not look nor feel seriously ill, and his only complaint was pain. The diagnosis was acute dry pleurisy. I have met with many cases of unmistakable phthisis in which the crepitant râle was heard as distinctly as in pneumonia. I have been struck with the number of patients who apply for treatment whose chief, sometimes sole, complaint has been of pain in the chest, and in whom careful examination reveals the physical signs of a little dulness, and a variable number of fine râles, either of the crepitant or subcrepitant variety, at the seat of pain. These sounds are superficial, are confined to a small area (usually), are increased by cough and deep inspiration, and are found most commonly in the following regions, in the order named: the right anterior base, either axillary region, the left anterior base, either posterior base, the rest of the lung. So common is it to find this condition, which I regard as due to recent or old fibrin on the pleura, or to adhesions, that the diagnosis of intercostal neuralgia or muscular rheumatism is rarely entered in my case-book. Râles at the apices of the lung, if old pleurisy be excluded, are commonly found to indicate phthisis, although the râles are referred to a localized pleurisy.

It may be urged that these sounds are not crepitant râles, but yet in everything but the element of a "shower of crackles" they correspond to the definition. They are certainly very fine râles, heard only on inspiration.

I have seen cases of pneumonia without râles until the stage of resolution is reached, and I have heard the crepitant râle over areas of marked dulness and bronchial voice and breathing, though in this case the râles have been much fainter and fewer in number than they usually are earlier in the disease.

I have always regarded the râle of œdema of the lungs as a *subcrepitant* râle of a peculiarly liquid quality.

I have always felt sceptical, to say the least, in regard to the crepitant râle being heard after prolonged decubitus and the like.

The conclusions to be drawn, then, from the study of this subject are: 1, that the crepitant râle is not pathognomonic of pneumonia; 2, that it is heard also in dry pleurisy, in phthisis, and in broncho-pneumonia 3, that there is a strong probability that the râle is always due to pleuritic inflammation; 4, that the question as to its being heard in œdema of the lung and pulmonary apoplexy is yet unsettled.

Dr. Josiah Hasbrouck died in Rondout a short time ago of heart disease, aged fifty-nine years. He began the practice of medicine in 1856, and was President of the Ulster County Medical Society in 1875. He was also a director of the State of New York Bank for many years. Mr. Hasbrouck took considerable interest in politics. He served three terms as supervisor and was elected coroner twice.

An Editor's Opinion of the Medical Profession.—The *New England Medical Monthly*, referring to the recent foolish action of the London College of Physicians and Surgeons, says: "There is an old adage that 'There is no fool like the old fool,' but we believe that there are no people or profession in the world that make such fools of themselves as do doctors, either alone, individually, or collectively as societies."

SIMULO AS A REMEDY IN EPILEPSY.[1]

By M. ALLEN STARR, M.D., Ph.D.,

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In March, 1888, Dr. W. Hale White, of London, published in the *Lancet* some observations upon the use of simulo in the treatment of epilepsy. The drug was used in the form of a tincture, in one to two drachm doses three times a day. This tincture was made from the seed of the simulo plant (*capparis corriacea*). The fruit of this plant resembles a cherry, and is about half an inch in length. The skin is tough and brown, the body is softer and green, and surrounds an almond-shaped pit with white kernel. The kernel has a bitter taste, and it is from it that the tincture is made. The tincture itself is of a yellowish-brown color, and has an aromatic taste, reminding one slightly of sherry.

Dr. White[2] reported seven cases of epilepsy treated by simulo, all of them being cases in which several fits occurred every week.

In the first case neither simulo nor bromide was of any particular benefit. In the other cases there was considerable improvement while taking simulo, the dose being from one-half to two drachms, t. i. d. The attacks diminished in frequency and were less severe while the patients took the drug.

In Case II. the improvement was temporary. In Case III. the fits were reduced from sixteen per week to four per week. In Case IV. the fits were reduced from twelve per month to three per month. In Case V. the fits were reduced from one or two daily to two per month. In Case VI. the fits were reduced from one a month to none in two months. In Case VII., a case of unilateral spasm, with paresis, the spasm was very much relieved while taking the drug, though it had not been affected by large doses of bromides.

Dr. White concludes by stating that he would not have it thought that simulo will cure epilepsy. He believes that an improvement occurs while taking it, and that it may be used as a substitute for bromides when these produce ill effects.

In August, 1888, Eulenberg, of Berlin, published some observations made after using the drug for a few months on seven patients—four epileptic and three hysterical. It appeared to have no effect whatever in the cases of hysteria—the attacks of hysterical or hystero-epileptic character persisting in spite of its use.

In three of the four cases of epilepsy its effect was found to be weaker and less certain than moderate doses (90–120 grs. daily) of bromides. In the fourth case, in which the use of bromides for years had not succeeded in reducing the number of attacks below four to eight in a week, the effect of maximum doses of simulo (3 vj. daily) was to reduce the number of attacks to two to five in a week. Subsequently this patient was put upon simulo and bromides for fourteen days each alternately; and it was found that during the two weeks when he was taking simulo the attacks were less frequent than during the two weeks when he was taking bromides; at the same time he felt much brighter and better while free from the effects of bromide. Subsequently Eulenberg combined the bromide with the simulo, giving a half-dose of each, and the effect was at first as favorable as under the use of larger doses of simulo alone. The favorable effect, however, did not last; the number of attacks gradually increased, and the intervals between them became shorter. Finally the patient was put back upon bromides alone.

Eulenberg concludes that while simulo is not without use, it is decidedly inferior to bromide in its effects.

Having seen the article in the *Lancet*, in April, 1888, I requested Mr. Fraser, of 208 Fifth Avenue, to import some tincture simulo from Christy & Co., in London, the man-

[1] Read before the Section in Practice, Academy of Medicine.
[2] Lancet, March 31, 1888.

ufacturers. This he did during the summer, and I began its use in October last. The following cases were selected from a considerable number of epileptics under observation, as they were cases of extreme severity, and seemed to offer the conditions for a fair test of the powers of the drug. In mild cases, where attacks are occurring but once in one or two months, there are so many factors to be considered in the causation of individual attacks as to make any conclusions regarding the action of remedies somewhat unreliable. Intercurrent indigestion, mental excitement, etc., play a great part in inducing these occasional attacks. But when several attacks are taking place daily the power of a drug to avert attacks can be tested with some certainty.

The results reached have been of interest to me, and may be of profit to others. Therefore I have ventured to lay them before you now.

CASE I.—M. H——, aged forty-eight, has had hysteria and epilepsy since age of sixteen; attacks of grand mal about once in two months, and attacks of petit mal about four to six daily. She has been under my observation continuously since December, 1887, and the effects of treatment have been carefully noted. She has been upon bromides much of the time, since these have the effect of reducing the number of the petit mal attacks to one or two daily, and of decidedly reducing the grand mal attacks in frequency and severity. But the effect of bromide in this case is to produce a condition of very extreme nervousness, with constant sense of fear, great depression with sleeplessness, and suicidal tendency and polyuria. She becomes extremely hysterical as soon as the dose is pushed beyond forty grains daily—is in a state of constant tremor and alarm. For this reason it has been impossible to keep up bromides continuously. This effect is not from any dread of the drug, as I have often given it without her knowledge, producing the same effects, and the addition of caffeine, digitalis, belladonna, or atropia to the bromide does not obviate this effect. The case has, therefore, been very difficult to manage, and very little success has been obtained. Nitroglycerine has always controlled the petit mal attacks better than any other drug, but has no effect upon the grand mal attacks. Antipyrin and antifebrin have been tried and proved useless in this case.

In October last she was put upon tincture simulo and kept upon it for two months. The frequency of the petit mal attacks was in no way affected; they became more frequent than when she was using either bromides or nitroglycerine. But during this period of two months she had no severe convulsions. She was an extremely hysterical patient and at times her attacks were doubtless of a hysterical character. The drug did not appear to mitigate the hysterical symptoms in any way, and, as the petit mal attacks increased, it was thought best to suspend the treatment.

In this case it failed to arrest hysterical attacks or attacks of petit mal, but for a time prevented the occurrence of grand mal attacks.

CASE II.—L. G——, aged twelve years, has had epilepsy ever since she was a baby, her attacks consisting of slight convulsions, with loss of consciousness and loss of urine. She came under treatment October 20, 1888, and was at that time having attacks every day or two. She had taken bromides without any very marked effect. She was put upon tr. simulo, in ʒ ss. dose t. i. d., which dose was increased to ʒ ij. t. i. d. During the first week she had 5 attacks; second, 3; third, 2; fourth, 2; fifth, 2, but one severe; sixth, 3, but one severe. She then remained away for four weeks, keeping up her medicine, and on reporting on January 12th said she had had six attacks since January 1st. The effect of the simulo was therefore to reduce the number of attacks from about five a week to about two or three a week, and to diminish their severity, as in the attacks she no longer lost control of the bladder.

CASE III.—L. M——, aged sixteen. Grand mal attacks, occurring chiefly at night, since age of fourteen, at first irregularly, then more frequently, one every four or five days. During December, 1888, she had three attacks every night for three weeks, followed by an intermission of eleven days without attacks. In addition to grand mal attacks, with biting of tongue, falling, and sleep, patient has petit mal attacks, consisting of either a sensation of fainting, with pallor, or a slight twitching of her face and hands, with very short loss of consciousness. These occur several times daily. She was put upon tr. simulo, ʒ iij., on January 8th, which was increased to ʒ vj. on January 29th, at which dose it was kept up until February 26th. She had no night attacks from January 8th to 19th, and no fits of grand mal until February 1st, when she had one, but between February 17th to 20th she had four grand mal attacks, two in the daytime.

During the month of February she had seventy-five attacks of petit mal, no day passing without one, and on some days four occurred. The simulo evidently had no effect upon the petit mal attacks, but diminished the grand mal attacks very much—from sixty-three attacks in December to five attacks in February. During the month of March, on bromide, chloral, and belladonna, with nitroglycerine, she had no grand mal attacks and but eighteen petit mal attacks.

CASE IV.—F. S——, aged fifteen. Grand mal attacks, preceded by aura of sudden speechlessness, with turning of head to the right, attended by cry, loss of consciousness, biting of tongue, severe fall, loss of urine, and general convulsion, followed by stupor. These have occurred since age of twelve, when first attack occurred at 6 A. M., without any known or ascertainable cause. The attacks recur about every three weeks, in spite of bromide treatment. General health very good and appearance healthy. Had been under bromide treatment until February 4, 1889, when tr. simulo, ʒ iij. daily, was begun. Attack on February 16th. On February 23d, tr. simulo, ʒ v. daily, and up to April 16th no attacks had occurred, an interval of eight weeks instead of the usual interval of three weeks.

CASE V.—John H——, aged eighteen, had convulsions as a baby, but was free from them until the age of fifteen, when he had an attack of grand mal. Such attacks have recurred at shorter and shorter intervals, and when he applied at the clinic, January 31, 1889, he had had one attack every month for several months. He was put upon simulo, ʒ vj. daily, and reported on March 30th that he had had no attacks since the treatment was begun.

CASE VI.—Max L——, aged twelve, has had epilepsy ever since the age of two years. He has attacks of grand mal about once a month, and attacks of petit mal several daily. He was put upon tr. simulo, ʒ vj. daily, on December 26th, and took it constantly until March 11th. During this time he had no attacks of grand mal, but the attacks of petit mal continued as before.

CASE VII. *Procursive epilepsy.*—W. V——, aged nineteen; patient has had procursive epilepsy since the age of seven, the attacks consisting of a sudden pallor followed by a flushing of the face, and a sudden movement of the body, which he cannot control. In the daytime the movement consists of a sudden running forward for twenty or thirty steps without falling, followed by a laugh or a few incoherent words. This may or may not be attended by a loss of consciousness. He usually avoids objects in his way when running, but is not arrested by anyone calling him. At night in bed the movement consists of a sudden violent turning from side to side rapidly and repeatedly, followed by the same laugh, or a few words, or by the saying of a line of a song. These attacks have never been controlled by bromides. He has from three to six daily, and during the year 1888 his average was 100 every month. These attacks were in no respect changed by the use of tr. simulo; the number of attacks in December, 1888, being 93, and in January, 1889, 126, during which time he was taking simulo in ʒ v.–vj. doses

daily. During February and March he was put upon bromides and nitro-glycerine. The number of attacks in February was 60, a reduction of one-half, but during March he had 115, of which, however, 49 occurred during the last week of the month, coinciding with an attack of indigestion. As bromides alone had always failed to control these attacks, it seems as if the nitro-glycerine was responsible for the diminution in their frequency.

In addition to the procursive attacks this patient has nocturnal convulsions. These convulsions had been noticed at the age of nine, but were immediately controlled by bromides and chloral; and from the age of ten to that of seventeen no convulsions occurred. But for certain reasons the bromides were stopped suddenly in October, 1887, and two weeks subsequently he had a typical attack of grand mal at night, and during the six months following he had 21 such attacks. The bromides were then begun again but no longer prevented the attacks, and during the period from April 15th to October 15th, 26 attacks had occurred in spite of their use. They were then stopped again, no medicine being given until December 10th, when he came under my care. Between October 15th and December 10th he had 43 attacks of grand mal, with all its severe phenomena. It seems evident, therefore, that the results of seven years' continuous treatment with bromides in absolutely controlling the grand mal attacks were obviated by the sudden cessation of this treatment, with the result of establishing an epileptic habit which now refuses to yield to the bromides which previously had prevented its development. It follows that the sudden cessation of the use of bromides is not unattended with risk. This patient was put upon tr. simulo on December 10th, in 3 iv. dose, which was increased to 3 vj. dose. He had 4 attacks between December 10th and December 31st, and 8 attacks during January. It is evident, therefore, that since without medicine he had had between 15 and 28 attacks per month, while with tr. simulo he had 9 and 8 attacks per month, that the remedy had some effect in decreasing the nocturnal convulsions. As, however, on bromides he had had but 3 to 6 attacks per month, I put him upon bromide, chloral, and belladonna on February 1st. During the month of February he had but 3 attacks. During March he had 12, the attack of indigestion being responsible for seven of these, just as it was for an increase in the procursive attacks.

The general conclusions to be drawn from these cases seem to be that:

1. Tr. simulo has no effect upon attacks of hystero-epilepsy or upon the hysterical state.

2. Tr. simulo has no effect in modifying the frequency or severity of attacks of petit mal, or of procursive epilepsy.

3. Tr. simulo has some effect in modifying the frequency and severity of attacks of grand mal, but is inferior in this respect to the bromides.

4. In cases where for any reason it is deemed necessary to suspend the bromides, it would be well to substitute simulo for them.

There seem to be no ill effects from the use of the drug. I found no evidence of change in the rate or character of the pulse or respiration, no dilatation or contraction of the pupils, no muscular weakness, no mental depression or excitement, and no disturbance of the digestion in the doses in which it was used. The suggestion made by Eulenburg, that it would be well to obtain the active principle of the drug, is worthy of consideration. And I think it would be well to increase the dose progressively until one or even two ounces are used daily. The chief objection to its use at present is its costliness, the price being twenty-five cents an ounce.

Several College Presidents write that they had been using the treatment by suspension long before it had been suggested by Motchoukowsky or Charcot.

Progress of Medical Science.

The Waiting Method, or the Method of Credé in Expressing the Placenta.—This is the title of a book on the physiology and management of the third stage of labor, by F. Ahlfeld, Leipsic. The writer explains why he and other authors have abandoned the active method of Credé in the treatment of after-birth. They found it a disturbance of the physiological course of the third stage of labor, which is a source of numerous and unfavorable accidents, as hemorrhage, retention of the membranes, and severe diseases peculiar to the lying-in period. Ahlfeld prefers the method of Schultze to that of Duncan, it being more normal. The last pain which expels the child also separates the placenta by the decided contraction of the uterus. Then, during the next four or five after-pains, it passes deeper, and after about thirty minutes finds itself in the entrance of the vagina, closely followed by the membranes in a complete state. While the placenta moves deeper the fundus uteri ascends above the height of the umbilicus, and lies to the right under the liver. It usually has the form of a ball, with the walls in close apposition, and a blood-filled cavity is generally not found. The power of the abdominal pressure is very small in the third stage. In from one to two hours after the birth of the child a condition presents which he terms continuous contraction. The loss of blood after the birth of the child in the waiting method averages 453 grains, in four to five hours. In primipara the loss of blood in the first hour and a half reaches on the average 414 grains, in multiparæ 580 grains after delivery. The manner of the separation influences also the amount of blood. The author further delineates the means of the physiological predecessors of the course of the third stage. The retro-placental hemorrhage promotes the descent of the placenta, tampons the placental site, protects it against infection and incites pains. He finds the physiological antecedent of the separation of the placenta in the ampullar strata especially reasonable, the compact strata remaining on the chorion and is not expelled. If the separation does not occur in this manner, which is frequently the case, there remains a deep decidual strata, which decomposes easily, causes hemorrhage, and retards involution of the uterus. Atony of the uterus in normal conditions is not to be feared in the waiting period, also secondary and late hemorrhage are not to be expected. The author next employs himself with the sequence of the method of rapid delivery of the placenta. These consist of tearing of the fetal membranes, retention of the small placental parts, hemorrhage after expression, secondary and late hemorrhage, sub-involution, fever, and light and severe septic disease. These results are less frequent in well conducted institutions, but especially numerous in the practice of midwives. In reviewing his long years of experience, he gives decided preference to the waiting method, which he recommends as the best, surest, and least dangerous. The procedure is thus described: After the birth of the child, the external genitals are cleansed; bleeding, tears, and bruises closed; dry clothing placed under the patient, and this clothing observed every five minutes to tell whether it is bloody, especially whether blood is flowing from the vagina. If this is not the case, as in eighty per cent., the clothing under the patient remains. After sufficient time has elapsed and the bladder is evacuated the placenta is expressed through the vagina by means of mild external pressure; its passage through the vulva should take place as slowly as possible. If a severe hemorrhage occurs during the expression of the placenta the uterus is manipulated until the hemorrhage ceases, then the waiting method is continued. If, however, the hemorrhage is not subdued, the rapid expression of the placenta is found to be necessary. In the waiting method the patient must be as quiet as possible. Cold douches for the purpose of disinfection, and all irritation of the uterus except the massage are to be avoided. The

waiting method is to be recommended in the practice of midwives, and will result in far less damage in their hands than the expression of the placenta.—*The American Lancet.*

DIABETES AND TUMORS.—Dr. Tuffier has recently published a monograph on this subject. The coincidence of diabetes and neoplasms, only noted hitherto in a few scattered publications, and entirely overlooked in standard text-books, does not appear to be rare. This coincidence is not surprising to the author. He accepts M. Verneuil's bold theory that both tumors and diabetes are related to the arthritic diathesis. Already almost every form of tumor has been observed in diabetic patients. Almost every form of diabetes has been found to attack persons already the subjects of tumor. As a rule, the constitutional disease comes first; the patient is diabetic already before the tumor makes it appearance. Malignant tumors, as a rule, advance without causing much pain, and somewhat slowly in these cases, but they proceed more rapidly than the diabetic symptoms. They are apt to be taken for innocent growths. The complication in question is very serious in respect to operative interference, as we all know. No surgeon should think of removing small, innocent tumors which are causing no trouble.

Dr. Tuffier describes two instructive cases. In the first death occurred forty hours after the removal of a small parotid tumor. The fact that the patient was diabetic had been overlooked. This was also the case in the second example of the dangers of operation under the circumstances. "A little hypertrophic tumor of the skin of the cheek" was removed, at the patient's request. Phlegmonous erysipelas, followed by sloughing, set in and killed the patient within five days. Urgent operations must, Dr. Tuffier asserts, be undertaken with great caution. The safer are preferable to the most thorough, in his opinion. When an operation appears absolutely necessary, but not urgent, it is important to spend some time in reducing the diabetic symptoms by medical treatment. Should, however, all the sugar and the polyuria disappear, the surgeon must still never overlook the nature of the patient's diathesis. Under the most favorable circumstances, in any case of that kind, deep operations and prolonged dissections, free division of vessels, and the formation of large flaps are to be avoided. The slow progress of tumors and the little pain which they produce are important facts, according to Dr. Tuffier. He has found that malignant tumors lie almost latent in diabetic subjects for a long period. Removal of a similar growth from a healthy subject would hardly insure him against so long an interval of time before recurrence. When an operation is thought advisable, the thermo-cautery is preferable to the knife. No attempt to insure union by first intention should be made if it involves the slightest traction on skin-flaps. The wound must be laid open, but dressed with extreme antiseptic precautions.—*The British Medical Journal.*

WHAT IS A DISEASED OVARY?—Since the establishment of oöphorectomy as a recognized operation, many pathologists have testified to the hopelessly disorganized conditions of the structures which the surgeon has removed. Tubal disease, once considered a pathological curiosity, has been proved to exist as a common disorder by the researches of Drs. Kingston Fowler and Lewers. Forms of oöphoritis, destructive to the ovary at least, if not also prejudicial to the organism, have been revealed by diligent and unbiassed pathologists. Gynæcologists of the older school mostly admit the result of these discoveries, but maintain that the frequency of signs of chronic ovarian disease in the bodies of subjects who have died of other affections counterindicates radical operations, or indeed any operation at all. The oöphoritis, or salpingitis, detected in these cases clearly failed to kill the patients, and evidence that medical relief was sought is ever defective. The specialists, however, note the hopelessly diseased condition of the ovaries, as corresponding to authentic clinical histories of bad symptoms, definite and objective, as well as subjective. They declare that cases believed to be cured by expectant treatment have applied to them for relief which was afforded them by oöphorectomy. They further imply an imperfectly recognized motive—want of surgical confidence—in their opponents. No honest member of our profession can doubt that the older school are justified in insisting upon a close scrutiny of the results of operations for chronic diseases of the tube and ovary. The great operating specialists freely publish their results; but it is, in the present stage of our knowledge, extremely advisable that the inexperienced should abstain from these operations. Above all, science must throw more light on oöphoritis. Dr. Nagel, of Berlin, has published an article entitled, "Contributions to the Anatomy of Healthy and Diseased Ovaries," based on clinical material, chiefly supplied by Professor Gusserow. Dr. Nagel does not believe in the chronic follicular oöphoritis of certain pathologists. He considers that the condition simply implies an unusual number of follicles in a healthy ovary as an individual peculiarity. The follicles, at least, are normal, however the condition of the stroma may be disputed; and his researches show that morbid changes in the stroma do not affect the follicles for a long time, but ultimately cause their disappearance. They cannot proliferate by any morbid process. Nor does Dr. Nagel lay any stress on "hydrops folliculi." Follicles, half an inch in diameter, he found perfectly healthy, bearing ova. A large follicle, bearing its usual epithelium, but without its ovum, represents a degenerate condition, and cannot develop into a cystic tumor nor take any active part in the development of such a tumor. On the other hand, Dr. Nagel gives reasons why we may conclude that simple cysts of the ovary are generally cystic degenerations of the corpus luteum. Oöphoritis, however, he holds to be essentially interstitial, and he concludes, after examining a series of ovaries, that in all cases, directly an ovary becomes diseased, the interstitial tissue between the follicles, that is to say the stroma, is first attacked. The follicles retain their normal appearance, and continue to bear and nourish healthy ova for a remarkably long period after the onset of oöphoritis. As Slaviansky has already indicated, the follicles begin to wither directly the morbid changes in the stroma have reached a certain limit. The atrophy is in some cases active, in others passive. As a rule, circumscribed peritonitis is the cause of the disease, which progresses from the surface of the ovary inward. Dr. Nagel has, however, detected one case of true acute interstitial oöphoritis as a primary disease. This form leads to Kiwisch and Klob's "hypertrophy with sclerosis," where the ovary can grow as large as a goose's egg, its surface appearing like a mulberry. Dr. Nagel concludes that the later stages of oöphoritis represent an incurable condition, and that operation is justified for the removal of ovaries so affected. The operator must, however, bear in mind his important observations, which tend to prove that every ovary a little fuller than he thinks it should be is not necessarily morbid, and that a cystic projection from the surface of a small ovary is not sufficient evidence that it ought to be removed. The histologist, too, would do well to study the healthy human ovary from its earliest stages of development to its normal condition of atrophy after the menopause, and to teach what he sees to his pupils.—*The British Medical Journal.*

CHOCOLATES, confectionery, dried fruits, cheeses, and other food products are very often wrapped in what appears to be, and is described as, tin foil, but it is really an alloy, containing a good deal of lead. This dangerous practice is now prohibited in France, and the tin foil destined for wrapping food-stuffs and confectionery must be composed of "fine tin," that is, an alloy containing at least 90 per cent. of tin.—*British Medical Journal.*

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RUDIMENTARY ORGANS IN MAN.

THERE are two views of the theory of evolution current among medical men. Some, believing that all forms of animal life have developed gradually from one original form, find support for their view in the presence of rudimentary organs in the human body—remnants, they tell us, of organs which, in the development of the human body from an animal body of a lower type, have become useless.

Others, holding that there are great breaks in the course of evolution, and that the human body has not been developed from a lower form, but is a separate creation, view these rudimentary organs not as remnants of a pre-human type, but as essential parts of the human body, which, during the development of the human fœtus, or during extra-uterine life, serve in various ways, which have not yet been discovered, to perfect the adult form.

To those who wait for such discoveries, the brief but suggestive article of Dr. Cane (London *Lancet*, September 29, 1888), entitled "The Mechanism of Fœtal Formation," will be of especial interest. "The puzzle of rudimentary organs," he says, "has occupied my attention for years, and I have collected a host of facts concerning them which convince me that the biologists have made a mistake. They tell us that the platysma myoides, and the superficial muscles of that system, show descent from the panniculus carnosus of the cow and horse; that the rudimentary tail and ear muscles prove a pithecoid (ape) ancestry; and that the so-called rudimentary branchiæ indicate that the fishes are among our forefathers. I am of opinion that the reason is plainer and nearer at hand." A brief consideration of the subject leads him to believe that the muscular system is the chief power and the great mechanical means by which the fœtus is constructed, moulded, and formed into the shape it afterward assumes. From this stand-point one may readily see that these puzzling tissues, instead of being rudimentary ancestral heirlooms without a clearer meaning, are in reality the remains of that constructive machinery, common to all animals, which, with its nervous, muscular, and other agencies, controls the development of the fœtus, regulating the nourishment of the tissues, now producing growth, at another time causing atrophy, until the adult animal, with its proper species, variety, sex, and individuality, stands forth complete. "The umbilicus, the vestiges in the heart, the urachus, and the Wolffian body, are clearly remnants of embryonic function, and why not the vestigial muscles of the ear, scalp, skin, and coccyx?"

While, then, the muscular heart of the fœtus is, according to its laws, forcing blood onward to the growing tissues, the muscular tissue throughout the body is busy, in its own rhythmical way, modifying the force of flow and moulding into proper shape the newly formed matter. Thus, "in the human embryo, the so-called rudimentary muscles of the ear would be occupied forming the pinna and moulding the bones beneath. The occipito-frontalis would be shaping the skull to its rounded form. The spinal and coccygeal muscles would be employed rounding and curving the spinal column, and causing the coccyx to curve inward. In this work of forming the body all the muscles take part; afterward those not needed cease to grow or atrophy." These agencies have heretofore never been properly considered in works on embryonic physiology.

If the views of Dr. Cane are correct, one may easily see "that embryonic man possesses so-called rudimentary branchiæ, not because his ancestors were, but because he actually is, a fish living in water. He is placed in similar conditions to a fish; his blood must have oxygen, and, as the placental connection is not yet completed, the dissolved oxygen from the amniotic water passes through the attenuated membranes of the branchial folds and permits him to live."

So, he thinks, it is probable that the mammæ of the male may, in fœtal life, serve to elaborate fluids and substances to aid in the growth of the embryo, and in the adult continue their function as blood-glands.

Incomplete as his sketch is, he seeks to show briefly "how wide, interesting, and untrodden a field is opened up in the study of the mechanism of the making of man."

THE DISEASES OF THE UPRIGHT POSTURE.

WE are told in Holy Writ to observe and imitate the upright man, and this, in its spiritual sense, no doubt most attempt to do.

But in its physiological sense, Dr. Clevinger, of Chicago, and Dr. Eccles, of Brooklyn (*Brooklyn Medical Journal*), seem to think that uprightness is a mistake. The original mammalian type was that of a quadruped, which moved over the earth carrying its spinal axis more or less parallel to the surface on which it walked. The circulatory system and many of the ligamentous and visceral structures were developed on the theory, evidently, that this horizontal posture would be maintained. When man began to walk upright, with his originally quadrupedal organization, pathological changes resulted, and man continues to suffer, not from his fall, but from his rise.

The list of ills attributed by Dr. Eccles to the upright posture is long and interesting.

For example: Varicose veins and ulcers, piles, prolapsus ani, numerous malpositions of the womb and other pelvic organs, bow legs, numerous injuries to the viscera exposed by the upright posture, perityphlitis, spina bifida, goitre and cretinism, tumors.

The element of posture does not enter equally as a cause into all the foregoing cases, but Dr. Eccles shows that it does enter into some of them. His suggestions are interesting in connection with pathogenesis, but not

unfortunately, in connection with treatment. It is not advised that the human race attempt to revert to a quadrupedal mode of locomotion, in which we think the doctor most wise.

For, after all, it can easily be shown that the upright position is quite compatible with health and long life, and that, as a rule, the evils referred to can be averted by living temperate lives.

THE TREATMENT OF MENTAL DISEASE.

IN the *American Journal of the Medical Sciences*, April, 1889, Dr. Clouston gives a paper full of thought and experience upon this important subject. Four cases out of five of recent mental disease have either sleeplessness, or active brain excitement, or morbid motor activity as part of their symptoms at some time. The temptation, therefore, to immoderate use of hypnotics, sedatives, and motor depressants is very great. In most kinds of mental disease the patient has reached his sad condition as a result not only of evil agencies operating upon his brain in his own lifetime, but also of inherited feebleness of brain tissue. The physician uses drugs merely to hold the more dangerous tendencies of disease in check, and to further the repair of tissue, until such time as the *vis medicatrix* shall have succeeded, under favorable hygienic conditions, in curing the disease.

The first considerations must be to nourish the patient, to restore his nervous energy, to regulate his functions, to direct his thoughts into healthy channels, to exercise his muscles and lower centres so as to get physiological and safe outlets for spare energy, to increase his self-control, to draw out his natural sense of pleasure and interest in surrounding objects. When using hypnotics and sedatives one should frequently ask himself: Are the patient's functions becoming disordered by them? Is the patient's mental state improved essentially by the sleep and quiet which they produce? Do the drugs interfere with the natural tendency to recovery? What is the expression of the patient's eyes and face after the drug-given sleep? Is he acquiring a drug habit? Is he losing his control of himself in any way, as a result of the use of the drugs? In insanity all drugs should be used experimentally at first, to see whether they produce real benefit, and the physician should omit them from time to time, to see how the patient does without them. A patient, insane or threatened with mental disease, should never be narcotized. In his article Dr. Clouston gives many interesting facts in regard to the use of drugs in mental disease.

THE PARTING OF LICHEN RUBER AND LICHEN PLANUS.

A QUESTION which has for some years been heating the minds of dermatological specialists is that of the identity of two somewhat rare and obscure forms of skin disease, viz., lichen ruber and lichen planus. These terms do not probably arouse the deeper emotions of the heart or convey any acutely definite clinical picture to the mind of the average practitioner. The question involved in their significance, however, has somewhat more than a superficial and cutaneous, it has a national, importance. It is not a mere matter of corium. The German writers have asserted, from the time of Hebra and Kaposi, that the two diseases are identical; while for several years a number of American dermatologists, and especially Dr. A. R. Robinson, have contended that they were separate diseases. A great strife has been waging—*sævit amor ferri.*

We have recently received from Dr. Robinson an elaborate monograph on the subject; while Dr. R. W. Taylor has contributed to the same topic in the *New York Medical Journal* of January 5th. We can safely say that these two communications, coming from such competent observers, settle the question between planus and ruber for all reasonable physicians, and that the American flag may again shake out its folds in triumph over the slower minds on the other side of the sea.

We shall give, first, Dr. Robinson's conclusions:

"1. In doubtful cases lichen planus and lichen ruber are to be diagnosticated not by the form of lesion alone, but also by the whole symptoms and course of the eruption.

"2. That lesions resembling in form those of lichen ruber and lichen planus exist in other diseases.

"3. That Unna's division into lichen planus, lichen obtusus, and lichen acuminatus is an unnecessary if not an incorrect division.

"4. That the cases reported by Unna were not examples of the disease described by Hebra.

"5. That the same is true of the cases reported by Boeck and Lavergne.

"6. That no cases have been reported which show absolutely, or even with probability, that lichen ruber and lichen planus are but two forms of the same disease.

"7. If an identity of etiology existed, such cases could have been reported, as lichen planus is a rather frequent disease.

"8. Finally, in the absence of proof of a tendency to a combination of the two forms of eruption, or to a transformation of the one form into the other form, either as an eruption or of individual lesions, and from the fact that the symptoms, course, prognosis, histology, and, to a certain extent, at least, the effect of certain drugs upon the eruption are different, there appears to be no good ground for the view that there is any relationship between lichen ruber and lichen planus.

Dr. Taylor gives the differential points in the two diseases, from which it will be seen that, as lichen ruber is a rare, and at the same time a serious disease, while lichen planus is not infrequent, it is very important that a correct diagnosis be made.

Dr. Taylor shows that while in lichen ruber the morbid changes begin in the superficial corneous layers, in lichen planus they begin in the substance of the corium; that while the former disease is not perceptibly inflammatory in its earlier stages, in the latter it begins in circumscribed inflammatory spots and patches; that while the former begins as small conical papules of neutral orange or slightly brownish-red color, which in due time become obtuse, then flat, with a slight central depression and very moderate desquamation, lichen planus begins in the form of red papules, not markedly conical, which flatten out into round, oval, angular, star-shaped outlines. In lichen ruber the papules reach their full development (a line or less in area) and never grow larger. Large patches are always formed by the multiplication and fusion of papules of uniform size. In lichen planus the papules increase by peripheral growth until usually they attain a diameter

of one to four lines. In the chronic stage of lichen ruber all trace of papules is lost, the surface being rather rough to the touch, and of a brownish-red color. In the chronic stage of lichen planus the epidermal hypertrophy results in dense, hard, uneven, sometimes rugose surfaces, even to a marked verrucous condition, with a deep red, even bluish-red, color. Lichen ruber invades the palms and soles in totality in uniform patches. Lichen planus is not common on the palms and soles, and when present consists of localized patches; lichen ruber attacks the nails, causing hypertrophy, impairs their nutrition, and may even destroy them. In lichen planus the nails are unaffected, except very rarely in inveterate cases by extension from the backs of the hands. Lichen ruber causes impairment of the nutrition and loss of hair, chiefly of the body. In lichen planus the hairs are unaffected. Lichen ruber is not known to attack the mucous membranes, while lichen planus does. Lichen ruber is attended with emaciation, and in inveterate cases causes death by exhaustion. In lichen planus there is no emaciation, nor, as a rule, any systemic reaction. While lichen planus is not uncommon, lichen ruber is, fortunately, a very rare disease.

THE OLIVE-OIL TREATMENT OF GALL-STONES.

THE revival of the olive-oil treatment of gall-stones is of recent date, and several physicians, both here and abroad, have published certain observations which apparently show that the oil is of service in the disease or condition known as cholelithiasis. The correctness of these observations has not been so generally accepted by the profession, however, that we can speak of this method of treatment as a fully recognized one.

Dr. W. T. Porter, of St. Louis (*The Weekly Medical Review*), analyzes the scientific evidence we have on this subject, and is forced to the conclusion that the reported cases are based on improper observations.

The oil has been generally given with the idea that its lubricating action would facilitate the passage of concretions. "But," says Dr. Porter, "a little reflection will show that the mucous membrane of the biliary ducts cannot be coated with oil. As everyone knows, the common bile-duct passes obliquely through the duodenal wall, running for three-fourths of an inch between the coats in such a way that lateral pressure on the inner coat of the intestine would close the valve-like aperture of the duct. The oil, therefore, could not enter the common bile-duct through a mouth made to gape by distention of the duodenum."

Another reason why olive-oil does not accomplish what is claimed for it is found in the circumstance that it is not possible to give a coating of oil to a membrane kept moist with watery secretion. The experimental evidence on this point is conclusive.

Turning now to the practical aspect of the subject, as it confronts the practitioner of medicine, we may say that, unless the diagnosis of a given case is quite above suspicion, it is manifestly improper to deduce therefrom any lesson relative to the therapeutic efficacy of the drug employed. In this connection it is pointed out by Dr. Porter that, unless gall-stones are actually found in the stools, the assumption of gall-stone colic is not warranted. It has been claimed that biliary concretions do appear after the use of olive-oil. But in those cases in which the alleged concretions were actually examined by competent persons, they were found to be composed of soap and free fatty acids, *i.e.*, the oil itself in an altered form.

The author thinks it probable that "in most instances in which oil has been given for biliary colic no pains have been taken to verify the diagnosis. Many medical men, if summoned to a patient who combined severe paroxysmal pain with jaundice, would at once diagnosticate obstruction from gall-stones, and would not search the stools. It is easy to see that a diagnosis so made is totally untrustworthy as a premise on which to base conclusions regarding the effects of treatment. The factors in such a diagnosis are (1) paroxysmal pain and (2) jaundice. It will be convenient to speak of these together. The majority of gall-stones are formed in the gall-bladder. If the stone is impacted in the cystic duct, bile continues to flow unimpeded through the hepatic duct and common duct. If the form of the stone be angular, the duct wherein it is impacted may not be completely blocked, and bile may pass. The stone may be impacted in the common duct for many hours, and jaundice be absent, for the icterode hue seldom appears in less than sixty or seventy hours after complete occlusion of the hepatic or common duct, though highly colored urine and pipe-clay stools may appear several hours earlier. Jaundice, therefore, may be absent in obstruction from gall-stones. Pain may be absent during the passage of even large gall-stones. When the common duct has been once dilated by a large stone, scores of smaller ones may subsequently pass without pain or jaundice. In such cases pain and jaundice may both be absent. Large stones may pass quite unknown to the patient.

"On the other hand, the symptoms of the passage of stones may be present in cases that have nothing to do with cholelithiasis. Hydatid cysts, for example, have been known to give rise to such symptoms. Acute hepatitis, and even hepatic neoplasms "have likewise produced them. Further than this, intestinal worms or inspissated bile may block up the ducts and cause all the symptoms of hepatic colic. The pains of pleurisy, pleurodynia, intercostal neuralgia, gastric dyspepsia, intestinal and renal colic, are often referred by patients to the liver. On the other hand, pains thought to arise in the stomach are frequently due to gall-stones. Ulcer of the duodenum, near the opening of the common duct, has been known to produce spasmodic abdominal pain followed by jaundice, and the cicatrix of such an ulcer may completely obliterate the orifice of the common duct. The symptomatic value of jaundice is much lessened by the knowledge that jaundice may be brought about in so many and in such diverse ways. Jaundice and vomiting may undoubtedly follow the sudden contraction of the diaphragm that sometimes accompanies violent mental emotions."

Altogether it seems to us that the case against the vaunted utility of olive-oil in gall-stone colic, as presented by Dr. Porter, is a strong one. The author's conclusions bear transcribing, and are as follows: "1. No protecting or lubricating action is exerted by oil in those parts of the intestinal tract whose contents are fluid. 2. No positive diagnosis of gall-stone colic is possible unless a stone is found in the fæces, or unless an exploratory

operation is done. 3. There is reason to suppose that in many of the cases of hepatic colic said to have been benefited by olive-oil, the diagnosis has not been verified by the finding of gall-stones in the stools. 4. The pathological condition which is the immediate source of danger in gall-stone colic is the contractile spasm excited by the stone. 5. Treatment should be directed to relieve this spasm by chloroform, and moist heat internally and externally where paroxysmal pain or exploratory puncture makes the diagnosis probable, and by moist heat alone in cases where slight pain makes the diagnosis less probable. 6. Hot olive-oil is of assistance only because of its moist heat, and nothing is gained by its use which is not secured in equal measure by the adminstration of hot water. 7. The so-called olive-oil treatment should be abandoned, because it implies a special virtue in the oil which the oil does not possess, and a reliance on which tends to prevent the use of rational methods."

CANCER AND NERVOUS EXHAUSTION.

THE removal of a faithful and efficient officer from his position while he was dying from an insidious disease has naturally aroused resentment and indignation among right-feeling men. It seems a pity that the necessities of politics could not have delayed the removal of the late Postmaster of this city a few weeks longer.

Nevertheless, it is hardly right to make him too much of a martyr, or intimate that he was killed by the excessive work and anxiety of his position. His death was caused, it is said, by cancer of the stomach, a disease not due, it is now believed, to emotional causes or nervous over-strain.

News of the Week.

ATHLETICS AND SCHOLARSHIP.—Professor Richards, of Yale College, has made a study of the records of 2,425 students, in order to determine, if possible, the relations of athletics in Yale to scholarship. The general result is that the athletes fall slightly behind the non-athletes in scholarship, but not so much as to demand a suppression of such exercises. In some branches of athletic exercises the students who engage in the sports are above the average of the non-athletes in scholarship.

A TABLET IN COMMEMORATION OF A SURGICAL OPERATION.—On April 17th, in the Anatomical Theatre, Bologna, a memorial tablet was unveiled in commemoration of Professor Pietro Loreta's first conception and performance, August 26, 1887, of his now famous operation of resection of the liver. A vast assembly of students, clinicians from all parts of Italy, and of the general public were present. A splendidly illuminated album was also presented to Professor Loreta, at his own house, in commemoration of his recent return to Parliament as member for the first division of Bologna.

DEATH OF A MEDICAL JOURNALIST.—Dr. Paul Bricon, a prominent member of the staff of the *Progrès Médical*, died on Sunday, April 7th, of heart disease. He was born in Paris on August 1, 1848, and began the study of medicine in the University of Berne. After studying for some time at Würzburg, he graduated at Strasburg, and afterward at Geneva, where he was assistant to Dr. Zahn, the professor of pathology. In 1879 he returned to France, and in 1882 obtained the degree of doctor of medicine for the third time from his native faculty of Paris. He was a favorite of Dr. Bourneville's, who invited him to become a colleague on the staff of the *Progrès Médical*, and with whom he collaborated in the well-known work, "Manuel des Injections Sous-cutanées," which has been translated into English, Spanish, and Italian. He was also the author of a "Manuel de Technique des Autopsies."

DR. THOMAS LAYTON, a distinguished physician of New Orleans, died on May 5th, of heart disease, quite suddenly. He was a native of that city. He was educated in the Jesuits' College of New Orleans, and then went to Paris to complete his studies in medicine. Just before graduating, the Italian war occurring, he offered his services to the Pope and served in the medical corps of his army. Returning to New Orleans, he took an active part in all humane and philanthropic works. As head of the Charity Hospital for many years, he inaugurated the ambulance service.

THE NEW BUILDING OF THE NEW YORK ACADEMY OF MEDICINE.—The building of the New York Academy of Medicine, which is to be erected immediately upon property lately purchased in Forty-third Street, near Fifth Avenue, has been designed by R. H. Robertson. The lot upon which it will stand is seventy-five feet wide and one hundred feet deep, and when the new home of the Academy is finished, it will be one of the most complete structures of its kind in the city. The building will be five stories in height, and will also have a gable story. The material used in the construction of the front will be a brownish-red Kibbe stone, both rock-faced and dressed, and brick. The style of architecture is Romanesque. The first and second stories have large square windows in pairs, with columns between; the third and fourth floors will be lighted by arched windows, and the windows in the gable are square. The entrance is to be in the end nearest Fifth Avenue, and two large doors are divided by a massive stone column. Above the door are small square windows, and above them a stone balustrade. The basement of the building will contain the kitchen, lavatories, a room for unpacking books, and machinery. The first story is in itself a well-appointed club-house. The two doors from the street open into a spacious tiled vestibule, from which a door leads into an inner vestibule, opening into a large hall. On the right are a reception-room, a coat-room, an elevator, and stairs. On the left of the hall are the committee or reading-room, and the smoking-room, the latter being 36x26 feet. These rooms are lighted by the big windows in the front of the building. The rear half of the floor is devoted to a large assembly-room, 57x42 feet, and a dining-room, 31x28 feet. These two rooms are separated by a rolling partition, and they can be thrown into one at any time when required for large meetings or a largely attended dinner. One and a half stories are taken for this part of the house, and the rooms are twenty-six feet high. On each side are air-shafts, and by means of a glass arch a flood of light is let in at each end of the rooms. The dining-room is treated with a peaked ceiling, which will be very effective. The

half story in front of the building, which is eleven feet high, is to be used for committee-rooms, etc. The third story will contain the library. The Academy has long wanted room for its many valuable books, and the accommodations provided in its new house will be entirely adequate. On this floor, taking up the whole rear and part of the front, are the reference library and the "stock" room. These two rooms run through one story and a half. In the rest of the front is a reading-room one story high, and above it is another. In the front of the fourth story will be the pathological section and two specimen-rooms; and in the rear will be three large section-rooms and an apparatus-room. On the top floor will be the librarian's apartments, the janitor's quarters, and a microscopy-room. The building, when completed, will cost about one hundred and forty thousand dollars.

A New Specific Fever, which is called pleuro-pneumonic fever, has recently been described by Dr. E. Ballard. An epidemic of it occurred at Middlesborough, England, in July last. It is an infectious and contagious malady, running a rapid course, and having, according to Dr. E. Klein, a new and special bacillus as its cause.

The Sixth Italian Surgical Congress was held at Bologna, beginning April 16th (*The Lancet*). Professor Ceccherelli opened the proceedings with a memoir on "Surgery in Tubercular Peritonitis," and described four cases on which he had operated with complete success. He was followed by Professor Ruggi, who reported on the "Statistics of Laparotomy as Performed during the last Twelve Months." He announced a series of 115 operations, all successful except eight, of which he characterized the unfavorable conditions. In the afternoon sitting Dr. Angelini described a successful case of removal of an ovarian cystoma from a woman in her fifth month of pregnancy; and then Professor d' Antona gave a list of thirty-two successful ovariectomies, the most interesting of which was one performed for hystero-epilepsy. After him came Professor Pucci with a *catalogue raisonné* of laparotomies performed in the clinique of Professor Loreta. Two of these—one for stenosis of the pylorus, the other for stenosis of the cardia — proved highly instructive, Professor Loreta having proceeded by the method of divulsion devised by himself, with the most gratifying results. The next paper, of great interest, was that of Professor Durante, on "Removal of the Cæcum for Tuberculosis," only a few cases of which operation are recorded in surgical annals. The rapidity and completeness of the cure was one of its most gratifying features. Next day (the 17th) Professor Postemski, of Rome, resumed the subject of laparotomy, his thesis being "Laparotomia Diagnostica e Curativa nei Traumi dell' Addome" ("Laparotomy, Diagnostic and Curative in Wounds of the Abdomen"). In such cases, he said, the sooner surgical interference is practised the better. Of the twenty-three patients on whom he performed the operation, sixteen were suffering from wounds. Seventeen out of the twenty-three operations were successful, and he drew particular attention to one of the patients, who labored under a serious wound of the liver, and another not less seriously injured in the bladder. His success has been such that he has had constructed, in the Consolazione Hospital at Rome, a special ward, fitted up with every surgical and scientific appliance for the prompt practice of laparotomy. Among other papers discussed in the forenoon and afternoon sittings, were Professor d' Antona's paper on "Estirpazione di un Aneurisma Arterio-venoso della Femorale"—a most interesting specimen of surgical reasoning and practice; and another memoir by the same Neapolitan professor, "Sulla Milza Mobile ed Ipertrofica con Splenectomia e Guarigione" ("On Movable and Hypertrophic Slpeen, with Splenectomy and Cure"). On a similar thesis, "Sugli Effetti dell' Estirpazione della Milza nell' Momo," Professor Ceci read an admirable paper, as also one on "Extirpation of the Spheno-palatine Ganglion for Neuralgia;" while Professors Tizzoni and Poggi exhibited a dog in which, by surgical means, they had reconstructed the bladder—an achievement which attracted much attention and criticism. The concluding day (the 18th) was in some respects the most important of the three. Professor Ruggi read an elaborate chemico-pathological study of a patient on whom partial resection of the liver had been performed—an operation done for the first time by Professor Loreta. This case by Professor Ruggi was the second, and was highly successful. The woman was visited and examined by the members of the Congress. An interesting feature of the cure was the slow cicatrization, which, from experiments made on animals, Professor Ruggi saw reason to attribute to the slow continuous passage of the bile.

The Physician's Fee.—A decision was recently given in a suit for payment for services brought by Dr. Lange, of this city. Judge Brady, of the New York City Supreme Court, decided that, in an action by a surgeon for professional services, the plaintiff has a right to show that his standing in the profession is high as bearing upon the question of the measure of his compensation. The judge further said: "There is also evidence tending to establish a custom or rule of guidance as to charges of physicians for services rendered, and which makes the amount dependent upon the means of the patient—his financial ability or condition. This is a benevolent practice, which does not affect the abstract question of value, nor impose any legal obligation to adopt it, and cannot be said to be universal. Indeed, there does not seem to be any standard by which, in the application of the rule, the amount to be paid can be ascertained. Each case is under the special disposition of the surgeon or physician attending, and he is to decide as to the reduction to be made on account of the circumstances of his patient; and therefore, when the amount is in dispute, it follows that it is to be determined by proofs to be given on either side. The measure of compensation must be controlled more or less by ability in all the professions, and the service rendered by its responsibilities and success."

The Ohio State Medical Society.—The Forty-fourth Annual Meeting of the Ohio State Medical Society will be held at Youngstown, O., May 22, 23, and 24, 1889.

The Toner Lecture.—Professor Harrison Allen, of Philadelphia, will deliver the next Toner lecture in Washington, at the National Museum, on the evening of the 20th inst. The subject is: "The Clinical Study of the Skull, especially undertaken in Connection with the Morbid Conditions of the Jaws and Nasal Chambers."

THE OPENING OF JOHNS HOPKINS HOSPITAL, BALTIMORE.

(Special Report from our Baltimore Correspondent.)

THE formal opening of the Johns Hopkins Hospital took place on Tuesday, May 7th. For many years the medical profession of Baltimore has been looking forward with great interest to the establishment of this great institution. The deliberation which was exhibited by those in charge of the endowment fund, of three and a half millions of dollars, in its expenditure, and the careful manner in which the work upon the hospital buildings was done, indicated clearly that the hospital, when fully completed would represent the best and latest ideas in the possession of the scientific and medical world. Upon an eminence in the eastern section of the city the necessary buildings have been very slowly erected, until seventeen of them now stand complete, surrounded by beautiful grounds and gardens. At eleven o'clock on the morning of May 7th your correspondent, holding a ticket of admission to the opening ceremonies, reached the hospital and was ushered into the fine "administration building," which stands in the midst of the rank of buildings which face upon the green parks of Broadway. Entering, he found himself in a beautiful, lofty, many-sided hall, furnished with two galleries and decorated with flags and flowers. The company of distinguished guests present filled the hall and gallery and every available space in the adjacent rooms from which a view of the speakers could be obtained. Many eminent strangers joined with the favored residents of the city in welcoming this noble institution, which for many generations to come will be the pride of the State in which it has made its home.

After prayer by one of Baltimore's most revered pastors, and an interlude from an orchestra concealed in one of the many radiating halls, a short opening address was delivered by the President of the Board of Trustees, Mr. King, who has throughout watched most carefully over the birth and growth of this great establishment. At its conclusion he introduced Dr. Billings, who spoke at some length of the designs of Mr. Hopkins, the endeavors of his trustees to faithfully embody them, the various stages of the work, and the great results which the medical profession and the world at large expected from this hospital and its corps of medical teachers and investigators. In this work Dr. Billings had been the master-workman, and to his intelligent exertions is due the almost perfect result which has been attained.

After a brief intermission President Gilman, of the Johns Hopkins University, who is at present supervising the organization of the hospital corps and the equipment of its various departments, spoke in somewhat the same strain:

"Thirteen years ago, during the centennial celebration, of Independence Day, the university founded by Johns Hopkins began its work, and now, as we commemorate a completed century of constitutional life, the hospital, gift of the same donor, throws open its doors. These buildings are henceforth consecrated to the ministry of mercy and the restoration of health. That large-minded citizen of Maryland found two words adequate to his great ideas. 'University' and 'Hospital' were his chosen terms, and he linked them together by this significant phrase: "Bear constantly in mind that it is my wish and purpose that the hospital shall ultimately form a part of the medical school of that university for which I have made ample provision in my will.' Time may efface the personality of the founder, as it has effaced the personality of Rahere, the founder of St. Bartholomew's, but the beneficence of Johns Hopkins will last for centuries, and gratitude will cherish the memory of his broad views, his great liberality, his wise and beneficent purposes.

"Nor will posterity forget the Board upon which he bestowed this trust. During fifteen years the public has had the unpaid services of twelve of the most capable citizens of Baltimore, who have endeavored, under the leadership of their president, Francis T. King, to ascertain, by correspondence, travel, reading, and by consultation with experts in medicine, surgery, nursing, architecture, education, and administration, the most enlightened views of the civilized world with regard to the construction and management of hospitals. They have built these seventeen buildings from the income of the fund, and have even increased the principal gift. They have constantly benefited by the professional advice of the distinguished surgeon Dr. Billings. The noise of the hammer has ceased; the healing ministry begins.

"All the signs of the times point to a new era in the history of mankind. All the sciences are leading up to a better understanding of the laws of life, to a true anthropology and the consequent improvement of the physical, mental, and moral powers of man. Preventive medicine promises to do more and more for mankind. To the attainment of these noble aims, 'the relief of suffering and the advancement of knowledge,' the foundations of Johns Hopkins are forever set apart. On the one hand stands the university, where education in the liberal arts and sciences is provided, and where research is liberally encouraged; on the other hand stands the hospital, where all that art and science can contribute to the relief of sickness and pain is bountifully provided. An institute of medicine and surgery, a college of physicians and surgeons, a medical school, the office of which shall be to promote the training of young physicians and the encouragement of medical science, is imperatively needed. Is it too much to say that there is not such an opportunity on the face of the globe for another Peabody, or another Hopkins, to benefit his fellow-men.

"'The university needs all it has, and more, to carry on the non-professional courses to which its funds are appropriated. The hospital is the house of mercy, not the hall of philosophy. But in close alliance with both these foundations there is a place for a school of medicine which may bear its founder's name. This grateful city should no longer delay placing upon one of the squares, near the monument of Washington, the figure of Johns Hopkins, with designs to typify the ideas which underlie his gifts—'the advancement of knowledge and the relief of suffering.'

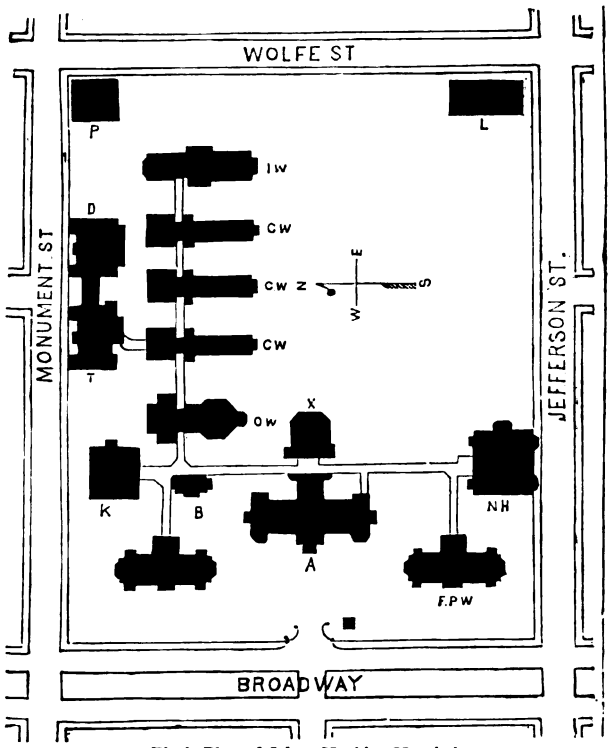
"Upon one hill of Baltimore rises a temple 'whose guardian crest, the silent cross,' is an emblem of the Christian faith; upon another a lofty column reminds us of the patriot's hope; upon a third the Hotel Dieu is placed—the house of charity. Significant triad! 'Here abideth faith, hope, and charity, but the greatest of these is charity.'"

After the conclusion of the address of President Gilman, the hospital was formally declared open by the Governor of the State of Maryland. The guests were then invited to inspect the buildings, and spent some time very pleasantly in observing, in one building after another, the system of heating, ventilation, etc., and the peculiarities in the construction of the walls of the wards, which are designed to permit the easy removal and destruction of all disease-products which may adhere to them. The arrangements for the accommodation of resident students are, as one of the speakers of the morning expressed it, "equal in every respect to those of a first-class hotel." The building for the accommodation of the nurses and the students of the proposed training-school for female nurses, with its kitchen, lecture-room, and library, deserved especial attention. The working of the dispensary, which will be shortly opened will, be watched with interest, as it has been promised that "all possible precaution will be used to avoid pauperizing the patients." Any institution which will solve this problem of medical charity without pauperization will deserve the thanks of the medical public.

DESCRIPTION OF THE HOSPITAL.

The hospital grounds, which front on Broadway, and are bounded on the other sides by Monument, Wolfe,

and Jefferson Streets, are 709 feet in length, and extend back a distance of 856 feet, covering four city blocks, an area of nearly fourteen acres. The hospital is built on the pavilion system, all the separate buildings being connected by covered corridors ten feet in width. The pavilions are two stories and an attic in height, the wards being in the second story. The first story, or basement, is raised slightly above the level of the ground, and is nine feet clear from floor to ceiling. The flooring is of artificial stone. The corridors connecting the different buildings open on this floor. The first floor contains only the ventilating and heating apparatus. The second story contains the wards, all of which open out on to the roof of the corridors. This roof is flat and provided with a railing, and is used ordinarily as a means of communication between the pavilions, and also as a place of exercise for such of the patients as are able to be about. By this plan each ward is practically an isolated building, the corridor coming only up to the level of the floor, and no obstruction is offered to the free access of air and sunlight. Yet in stormy weather the officers of the institution can pass from one building to another through the covered corridors without exposure. Yet before entering the ward they are obliged to ascend the stairway through the main hall, which is so thoroughly ventilated as to be practically in the open air.



Block Plan of Johns Hopkins Hospital.

A.—Administration Building.
X.—Apothecary's Building.
M.P.W.—Male Pay-ward.
F.P.W.—Female Pay-ward.
N.H.—Nurses' Home.
K.—Kitchen.
B.—Bath House.
O.W.—Octagon Ward.
C.W.—Common Ward.
I.W.—Isolating Ward.
T.—Amphitheatre.
D.—Dispensary.
P.—Pathological Building.
L.—Laundry.

The wards are of two kinds, rectangular and octagon. The oblong wards are each somewhat over 90 feet long, by about 30 feet wide, with a height of 16 feet. Each ward contains twenty-four beds, twelve on each side, with a window between each bed. There is a wall space of 7½ feet for each bed. At one end of the ward is a large hall, the main feature of which is the enormous aspirating shaft in its centre. Opening into the hall are the water-closets, lavatories, nurse's closets, and stairway. On the opposite side of the hall are the dining-room, and two or three other rooms with two beds each, for the reception of patients for whom it is desired to secure a measure of isolation for any reason.

The octagonal wards are two stories in height. These wards are divided into four rooms, providing a measure of isolation for the patients. At the southern part of each octagonal ward is a solarium. These wards are also built at the southern end of the pavilion, so as to obtain the greatest possible amount of sunlight.

Isolating wards are provided for the accommodation of patients suffering from contagious diseases. They are entered from the corridor through double doors. Some of them have a perforated floor (Wiman's system) to provide for extra heating, if occasion requires. In these wards each patient has a separate room, and the ventilation, instead of being effected by a single aspirating shaft for the whole building, as in the ordinary wards, is obtained by a separate shaft for each room.

There are no elevators in any of the pavilions devoted to the lodgement of the sick, but the stairways are broad and with a gentle incline, so that patients can be carried up on stretchers without discomfort to them or fatigue to the porters. A consideration of the ventilating problem is said to have been the main reason for not having elevators, it being feared that the shafts might serve for the conduction of foul air.

The pay-wards differ but little in their appointments from the free wards, except that each patient has a room to himself. They are furnished plainly, with chairs, bureau, washstand, wardrobe, and an iron bedstead. Each room communicates with the central hall, in which, as in the other pavilions, the aspirating shaft is found. At present the ward for men only is open, but the women's ward is building, and will probably be ready for the reception of patients in the autumn.

At present there are accommodations for about two hundred and thirty patients; but when the additional wards which it is proposed to build are completed the number of beds will be nearly four hundred, which was the limit set by Johns Hopkins himself for the capacity of the hospital.

The operating ward is in a building containing the amphitheatre, lecture-rooms, accident ward, nurses' rooms, a room in which patients are anæsthetized before the operation, and another room to which they are carried after the operation, and where they remain until such a time as they are in condition to be returned to the general ward. The amphitheatre has seats for two hundred students.

The out-door department occupies a building by itself, and contains a large waiting-room, drug-room, eleven separate rooms for the different classes, lavatories, and water-closets.

The administration building is a three-story structure containing the board meeting-room, apartments for the medical director, and resident physicians' and students' quarters. The board-room is modelled after Johns Hopkins library, containing his books and the same furniture that he used in his library. The quarters of the resident physicians and students comprise a reading-room, dining-room, bedrooms, bath-rooms, and water-closets. In the medical director's office are electric bells and speaking-tubes leading to each of the pavilions and separate buildings, a pneumatic clock connecting with all the other clocks in the institution, by means of which all indicate precisely the same time, and what is called a telemetre. The latter is an electric appliance by means of which the temperature of the different pavilions is registered, so that the director can tell, by merely looking at the indicator, whether the temperature in any ward, or even any part of it, is too high or too low. If he sees that it is too high or too low he has only to direct the orderly in charge of that ward, through the speaking-tube, to open or close the damper regulating the supply of fresh air circulating around the steam coils.

The apothecary's building is also three stories in height, and contains the drug-room, indoor dispensary, quarters for the druggist and his assistants, and on the upper floors rooms for the female servants.

There are separate buildings for the men's and women's bath-houses. These contain conveniences for the

administration of all sorts of baths—electric, mercury, Russian, Turkish, needle, etc. Everywhere throughout the institution the facilities for bathing are most abundant, and every encouragement is offered to the officers and attendants, both lay and medical, to observe the strictest cleanliness in their persons as well as about the buildings.

Besides the nurses' kitchens connected with each ward, which are used only for preparing food that may be required at night, or for warming broths and the like, there is a special building devoted to culinary purposes. This building is three stories high, with store-rooms, kitchen, dining-rooms for the employees, and sleeping-rooms for the cooks. The hot-water and steam-boilers are under Monument Street. They supply steam for the kitchen and for the steam-tables in the nurses' kitchens, and hot water for the heating apparatus in all the buildings. The pumps for filling the reserve tanks on the roof of the administration building are also located here.

The laundry is a one-story building, standing on one corner of the hospital grounds apart from all the other buildings. In the cellar is a place for disinfecting bed-linen and clothing; on the ground floor is the laundry, fitted up with all the latest and most approved forms of tubs, washing-machines, and wringers; and on the flat roof are lines for drying the clothes and giving them a good sunning and airing in fair weather.

The mortuary occupies another corner of the lot, and is also disconnected from the other buildings. It is two stories in height, the first floor being taken up with an amphitheatre for conducting autopsies, a pathological laboratory, and a room in which funeral services may be held. Above are the museum and histological laboratory. The nurses have a house of their own, standing apart from the other buildings. The house is four stories high, and contains about fifty bedrooms, a parlor, reading-room and library, dining-room, kitchen, and lecture-room.

In addition to the buildings already constructed it is proposed to erect a chapel, some four or five pavilions, and a greenhouse. The chapel will front on Wolfe Street, in the centre of the block between the mortuary and the laundry.

The buildings are heated by hot-water coils placed in the basement. The fresh air enters the chambers containing these coils, and after being warmed passes up to the wards and enters them through numerous registers in the walls near the floor. In the small rooms there are also open grate-fires. Ventilation is provided for by ducts eading to the large aspirating shaft in the main hall of each pavilion, and by other outlets in the floor under each bed, which also lead to the main shaft. The latter is octagonal in shape and nearly five feet in diameter. An ascending current is made by a coil of pipes placed in the shaft, a little above the level of the roof. In addition to the ordinary ventilating outlets there are also outlets in the ceiling which can be opened when a specially rapid and thorough renewal of air is deemed necessary. It is believed that, by these arrangements, the air in the wards will be entirely changed three or four times each hour, without the creation of any sensible draught. Fans in the basement will cause a more rapid movement of the air in damp weather when the atmosphere is heavy. As before mentioned, the temperature in each ward is constantly recorded in the office of the medical director by means of the telemetre.

The plumbing arrangements are in keeping with the other appointments, sightliness being made to yield to cleanliness and safety. All the pipes are exposed and can be inspected at all times without removing any woodwork or screens. The walls join each other, and the floor and ceiling, without angles; the floors are of hardwood, oiled, and great care has been taken in the construction of all the buildings that no places may exist where dust may collect. Every part of the walls and floors of the wards, rooms, halls, and closets is accessible, and can be readily cleared of all accumulation of dirt by means of a damp cloth.

Most of the buildings are of brick, with blue-stone trimmings. The cost of construction has been something over two million dollars, and there is an endowment of $3,000,000 to provide for the running expenses of the hospital. The buildings occupy an area of about four acres, leaving ten acres of open ground between and around the pavilions. The medical school is attached to the university, though the clinical instruction will be given in the hospital. The main objects of the hospital, as laid down by Johns Hopkins himself, are the care of the indigent sick, the training of nurses, and the advancement of medical science. And, as far as buildings can go in the accomplishment of these objects, the founder, were he living to-day, would have little cause for concern as to the realization of his hopes.

In the evening, at eight o'clock, the Trustees gave, in the parlors of the Mount Vernon Hotel—the present residence of President Gilman—a select and very enjoyable reception in honor of the visitors who had come from a distance to be present at the opening of the hospital.

It is to be hoped that the hospital will follow the example of the university in seizing every opportunity to repeat these pleasant little gatherings of its friends. Promise has been already given that in a few days the professors of the hospital will invite the physicians of the Medical Societies to a social assembly within its walls.

During the present week the buildings will be thrown open from day to day for the inspection of the various classes of citizens of Baltimore; first to physicians, teachers, and other professional men; then, in due order, to all who feel an interest in this great institution. Judging from the interest shown by the daily papers—those great interpreters and moulders of public thought—the desire to inspect the hospital will be a very general one.

For the past decade the opening of the Johns Hopkins Hospital and Medical School has been viewed with very great interest, by the better educated physicians of Baltimore, as a great unknown quantity which must necessarily enter into the equation of professional life and advancement of each and all, especially those whose place in the favor of the public was not yet secure. That these institutions would be of great benefit to the profession and the public was very evident, for an endowed school and a rich hospital having, as one of its objects, the training of resident students, must necessarily advance the standard of medical education, and this would be an unalloyed blessing. But who would be employed in the school and hospital? This was the question. Would numbers of strangers be brought in from other cities and from abroad, and, aided by the prestige of their professorships, drive out of practice those who had by life-long labor won a way to the respect of the public? Hitherto these questions have not been answered.

The Medical School is yet a thing apparently of the distant future. It is to be supported by the university (not the hospital) foundation; the university foundation rests upon the Baltimore and Ohio Railroad; which is—so to speak—in a delicate condition of health. So only such professors may be appointed as may in some way be supposed to hold positions in connection with the hospital. The actions of those in authority seem to indicate that the professorships will be filled with men from large hospitals and schools of other cities and of foreign countries, and that these will be allowed to bring their favorite assistants with them. The interest which Baltimore physicians feel in the matter is, therefore, of a general and broadly benevolent sort. The work done in the hospital will probably be of the strictly scientific quality, and, judging from that already done in the laboratories now open, it will be a credit to the city. Earnest physicians hope that the introduction of this new element into medical life here will enable the profession to shake off the trammels of ignorance and of clique, and to assume the position which is by right its own. None

feel with greater force than the young doctors of our own city the disgrace which has come upon the profession from the avarice and negligence of those who constitute the medical faculties of our colleges; who turn out, year by year, hundreds of ignorant and incompetent physicians, and who, actively or passively, resist every effort to raise the standard of graduation. Professor Osler has already, in his address before the Medical and Chirurgical Faculty of Maryland, indicated his determination, which we hope may be indorsed by his colleagues, to use every right means to secure a law which will take the right to license to practise away from the colleges, and to give it to a properly appointed State Board. In this endeavor he will receive warm support from many who wish Maryland to resume, in the rank of sister States, the honorable position which the fathers of medicine gave her.

On the whole, this has been a day which will be long remembered in this city, as marking a new era in medicine, and ushering in a period of unprecedented progress.

Reviews and Notices of Books.

THE PATHOLOGY AND TREATMENT OF DISPLACEMENTS OF THE UTERUS. By DR. B. S. SCHULTZE, Professor of Gynecology, Director of the Lying-in Institution and of the Gynecological Clinic in Jena. Translated from the German, and edited respectively by JAMES J. MACAN, M.A., M.R.C.S., and ARTHUR V. MACAN, M.B.M.Ch., Master of Rotunda Hospital, Dublin. 8vo, pp. 378. New York: D. Appleton & Co. 1888.

THIS treatise is one of the most practical and scientific on the difficult subject of which it treats that has appeared for a long time. With many practitioners displacements of the uterus are bugbears in practice, and the dreadful and heretofore uncertain pessary challenged the question, "to be or not to be." The reason for this is partly due to the fact that displacements have not been studied as a rule from a physiological and pathological stand-point. The normal and abnormal positions have not been distinctly and scientifically defined. This book does it in a very satisfactory manner. The great variety of normal positions are noted, the various departures therefrom are carefully studied, the value of bimanual examination clearly set forth, the utility of proper pessaries duly demonstrated and illustrated, while the strictly surgically operative procedures have a secondary place. The great and leading feature of the work is the masterly study of the pathological conditions which directly and indirectly bring about displacements. From such a stand-point it can be studied with great interest by every general practitioner, who does much of the ordinary gynecological work.

TREATISE ON THE DISEASES OF WOMEN. FOR THE USE OF STUDENTS AND PRACTITIONERS. By ALEXANDER J. C. SKENE, M.D., Professor of Gynecology in the Long Island College Hospital, Brooklyn, N. Y., etc. 8vo, pp. 966. New York: D. Appleton & Co. 1888.

DR. SKENE'S book is a valuable one, as giving the results of personal practical experience over the entire range of gynecology. The arrangement of the work is quite satisfactory, while his method of study and the conclusions drawn therefrom are logically accurate, if not always convincing. In these days of urgent and ingenious advocacy of surgical procedures as the only ones to be thought of in the treatment of gynecological difficulties, it is refreshing to read an author, an acknowledged expert in his line, leaning toward conservatism with the knife and scissors. In reparative operations about the vagina, cervix uteri, and bladder, this is especially noticeable in the pains taken to steer between the necessary and the unnecessary procedures. In carrying out such plans the author often manifests an ingenious as well as conservative turn in saving tissue, and in thus proportionately militating against further loss of function. In such a treatise it is to be expected that much ground already well trodden will be renewed, but this is very judiciously and systematically done in accordance with the advanced and accepted views of the present day. His preferences for particular lines of treatment are fairly put, and will have their due weight not only with the student and beginner but with the specialist, for, underlying all injunctions *pro* and *con*, the reader is made to feel that there is a foundation of extended and well-worked personal experience upon which firm convictions securely rest. Growing out of the author's studies, also, there is often to be noticed a positiveness of statement and force of expression which leave no doubt in the mind of the reader of his meaning and intent. Without disparaging the other parts of the work, it is safe to say that the chapters on diseases of the urethra and bladder are particularly well digested, and rich with practical suggestions as to operative and other remedial measures. The illustrations are remarkably good, and serve an admirable purpose of elucidating the text, terse and to the point as it is. The representations of different steps of many of the operations, otherwise difficult to comprehend, are particularly successful, and convey to the mind of the reader the essential points in the technique of the procedures. This fact is one of the many commendable features of the work. As a whole, the work will have a healthful and lasting influence upon the profession in placing advanced gynecology on a firm and rational basis of practice. As such it is destined to take its place in the front rank of text-books on the subject.

EXPLORATION OF THE CHEST IN HEALTH AND DISEASE. By STEPHEN SMITH BURT, M.D., Professor Clinical Medicine and Physical Diagnosis at the New York Post-graduate Medical School, etc. 12mo, pp. 206. New York: D. Appleton & Co. 1889.

THESE chapters comprise the author's system of teaching physical diagnosis at the above-named institution. They cover the classical topics of this department of medical teaching with the usual modifications of experience. Especially commendable is the author's insistence upon the fact that "precision in diagnosis is more surely attained by treating each sign as subordinate to the various combinations of signs which are found in the different maladies." A chapter on "Calormetation," or surface thermometry, is an unusual addition to the book, which, as a whole, is a most excellent one for a beginner. It is based on the fact that the foundation for such study is a knowledge of the topography of the normal chest.

THE NATIONAL FORMULARY OF UNOFFICINAL PREPARATIONS. First issue. By authority of the American Pharmaceutical Association. Published by the American Pharmaceutical Association. 1888.

THIS is an attempt to establish a uniformity in the composition of several preparations which are not recognized by the Pharmacopœia, but which are, nevertheless, more or less frequently prescribed by physicians. It would be an advantage to the physician, no less than to the druggist, if these various preparations were made according to definite formulæ, and to bring about so desirable a result is the object of the compilers of this "Formulary."

FRACTURE OF THE SPINE: its Immediate Treatment by Rectification of the Deformity and Fixation by Plaster-of-Paris Jacket. By HERBERT L. BURRELL, M.D., Surgeon to Carney Hospital; Surgeon to Out-patients, Boston City Hospital; Assistant Surgeon, Boston Children's Hospital; Demonstrator of Bandaging and Apparatus in Harvard University.

THIS is a reprint of a paper read at the Annual Meeting of the Massachusetts Medical Society in June, 1887, and is mainly an analysis of eighty-two cases of fracture of the spine treated at the Boston City Hospital.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, April 18, 1889.

ALFRED L. LOOMIS, M.D., IN THE CHAIR.

DR. E. F. BRUSH read a paper entitled,

THE RELATIONSHIP EXISTING BETWEEN HUMAN AND BOVINE TUBERCULOSIS,

which consisted chiefly of an analytical study of the writings of travellers and historians regarding the prevalence of tuberculosis among men, where cattle were domesticated, and its absence where the flesh and milk of cattle were not used.

The handsomest cattle were seen among the inbred, and among these tuberculosis was most common. It had been supposed that this disease in the human race was the result of civilization, but observation showed that among certain uncivilized tribes it was equally common. Nor was its existence due to climate or locality; every known part of the globe, with few exceptions, was its habitat. After studying the question of climate, etc., the only constant associated factor which Dr. Brush had found in the prevalence of human tuberculosis among a given people was its prevalence in the bovine race domesticated by that people. To establish this fact he first drew attention to the barbarous natives of Africa, among certain tribes of which tuberculosis was not known, and cattle were not domesticated; while among the tribes where tuberculosis prevailed, there also the meat and milk of the bovine race were used as food. Daniels had stated that along the coast of Africa tuberculosis was present among the people, while absent in the interior; and it had been further shown that the people on the coast used freely of cow's milk and drank the blood of the bullock, but in the interior cattle could not exist on account of a poisonous fly. Passing from the hot climate of Africa to the cold climate of Denmark, he found more than one cow to two inhabitants, and the death-rate from phthisis ranged between two and three per thousand; while in Iceland there was but one cow to four inhabitants, the dairy product was sold chiefly for the payment of debts, and was little used by the inhabitants, and phthisis was very rare. In St. Michael, of the Azores, the peasantry used scarcely any other milk than that of the goat or ass, and among them, according to Dr. Webster, phthisis was very rare. The Esquimaux also, who had no cows, were free from tuberculosis, while the disease was present among those who kept this domestic animal. Australia had been free from tuberculosis until the successful introduction of cattle, commencing about 1826. Previous importations of cattle had proven failures. The author believed that the death-rate from phthisis would go on increasing in that part of the world until the breeding of cattle should be properly regulated by law. Few countries enjoyed as great freedom from consumption as Switzerland, yet there the disease was much more common where the dairy product was most used. Madagascar's semi-civilized tribes had great herds of cattle, and made milk, meat, and rice their principal diet, and phthisis was also quite prevalent.

In Algiers phthisis existed only among those who used the products of the dairy, while the semi barbarous natives near them, who kept no cattle, were free from the disease. He believed that in Greece phthisis was rare among the natives, and in the town of Athens there were only five or six cows.

Men of scientific ability had sometimes, on visiting a strange country, found no phthisis among the inhabitants, while at a subsequent visit it was present, and they concluded they must have been mistaken in their first observation. But the probable explanation was that, since their first visit, cattle had been introduced. This was especially true with regard to India, where the cow was being gradually introduced by the English; yet among the natives who adhered to their religion the milk and meat of cattle was not used, and they had immunity from phthisis.

In the steppes of Russia, where there was absence of the bovine race, there was absence of tuberculosis among the people. In Quito, Ecuador, phthisis was absent, and what milk was used was first boiled. In certain parts of the plains of Ecuador, according to Professor Orton, the dairy cow existed, as did also phthisis. In some portions of Italy the death-rate from phthisis was extremely low, corresponding to the comparative absence of the dairy cow. In central and upper Egypt phthisis was decidedly uncommon, as were also cattle.

Taking into consideration all these facts, he thought there was little doubt that inbreeding in the bovine race was an important etiological factor of phthisis in the human race, not only in sowing the germ, but also in preventing its extinction. If cattle were to become extinguished, he thought the germ of tuberculosis would die out in the human race. The cow was the only animal which had been known to transmit tuberculosis to her offspring by inheritance. Yet he was fully aware that this statement would meet with considerable opposition, as many believed the disease was hereditary in the human race. This view, however, had not been proven.

Dr. Brush narrated an experiment made by him some months ago. He fed the tuberculous lungs of a cow dead of tuberculosis to some chickens, and soon one of the hens, which he afterward killed, showed tuberculosis of the laryngeal glands. He put her eggs under another hen, twenty-three of which developed fœtal chicks, but all were dead when the shells were broken. He took some of the eggs, which he had not used for setting, to the Carnegie Laboratory, and Dr. Grauer failed to find bacilli, but they were present in the lymphatic glands of the hen he had killed. Three of the hens fed on the tuberculous matter died, extremely emaciated, notwithstanding they had had plenty of food after having finished the tuberculous meat. One was burned, and the rooster, the last of the set, was stolen. There was nothing to account for the eggs failing to hatch.

He had found no evidence of tuberculosis developing in wild animals, nor would inbred cattle in which it prevailed be able to withstand the hardships of the wild state.

DR. HERMAN M. BIGGS expressed regret that Professor James Law, of Cornell, was not present to open the discussion, as had been expected. He had been greatly interested in Dr. Brush's paper, but must say that he could not accept his conclusions. Nothing was so unreliable as statistics, especially those of the kind quoted by the author. Even if the statistics given were reliable, they would not prove the conclusions arrived at. For instance, in the steppes of Russia, Hirsch had stated that, although tuberculosis was rare in that region, yet it did prevail to a certain extent. In Greenland, cows, sheep, and hogs were domesticated only in the southern portion, not in the northern, eastern, or western; yet Hirsch stated that in Greenland the mortality from phthisis was very large. According to the same authority, no country was more free from phthisis than Morocco, yet throughout that country there were considerable herds of cattle which resembled closely the Alderney breed. Then, in Egypt, phthisis was not very common except in the low countries, but there it was exceedingly common, and there was no evidence to show that inbred cattle were more numerous in those portions than in others. Again, reference had been made to the absence of phthisis in Quito; but while it is generally rare in the highlands of Western South America, especially in Peru, yet in the lowlands it was very common, while cattle were quite as numerous in the highlands as in the lowlands. Therefore he believed the author's statistics were unreliable. Besides, they left out other factors which influenced the development of tuberculosis. Before the Conquest, tuberculosis did not

exist at all among the inhabitants of Peru and Chili, but afterward, when the interior had been penetrated by Europeans, it became quite prevalent. In the Sandwich Islands the mortality from phthisis among the natives was now from twenty to twenty-five per cent., not because of in-breeding cattle, but because of the introduction of the disease by Europeans. The American Indians did not use inbred cattle, yet a large proportion of deaths among them was due to phthisis tuberculosis.

The theory advanced by the author left out of consideration other important factors. If tuberculosis were transmitted principally through the milk and meat of the cow, it would occur much more frequently in children, who were fed almost exclusively on milk; but, as a matter of fact, the disease increased with the advance of age. The fact that tuberculosis was more common where there were inbred cattle, could be better explained by the further fact that inbred cattle were most common among highly civilized people, who adopted customs tending to the development of tuberculosis. The things which had the chief influence in the development of phthisis were the food, the occupation, the clothing, the surroundings, etc., things entirely aside from the question of domesticating cattle. In a given locality it had been shown that those pursuing indoor occupations were most subject to phthisis. He thought the theory advanced would not at all account for the large mortality from phthisis among soldiers. It seemed to him irrational to ascribe phthisis in man to its existence in animals, when for its transmission it required the ingestion of the meat or milk of those animals. Tuberculosis acquired in this way should affect the alimentary canal rather than cause pulmonary tuberculosis. There were many other more probable ways for the transmission of tuberculosis, the principal one being the inhalation of dried sputum of tuberculous patients. Moreover, the portion of the tuberculous animal consumed by man usually did not contain the tubercle bacilli. The bacillus was rarely present in milk, except in mammary tuberculosis. The author had said that tuberculosis was most commonly found in the bovine race, but Dr. Biggs had found that more than sixty per cent. of hospital patients who reached the autopsy-table showed well-marked lesions of pulmonary tuberculosis.

Dr. Biggs closed his remarks by saying that the sputum was the chief agent for the transmission of tuberculosis, and while he believed that a larger number of cases occurred through infection from animals than was commonly supposed, yet he thought this number was very small compared with the total number of cases of pulmonary tuberculosis.

Dr. Forrest related a fact opposed to the view advanced by Dr. Brush, namely, that in the section of the South where he came from, the whites were almost entirely exempt from tuberculosis, while the colored people were much subject to it. The whites, however, were those who used beef and milk, while the negroes consumed very little of these articles, living mostly on pork and corn meal.

Dr. Crampton asked if there was a ready means of determining whether the meat and milk of the cow contained the tubercle bacillus, and whether heat would destroy liability to infection.

Dr. Agremonté said that in Port-au-Prince, Hayti, pulmonary tuberculosis was much more common among the colored people than among the whites, yet the latter alone obtained milk and beef; further, that the classes among whom it prevailed were accustomed to subject their meat (pork) to long cooking, which beyond doubt would kill the tubercle bacillus, as this microbe would not withstand a temperature of even 200° F. Again, he believed that tuberculosis was more common among domesticated swine than among cattle.

The President remarked that it was undoubtedly true other facts than the use of milk or flesh of cattle were necessary for the development of pulmonary tuberculosis, but that this aspect of the question did not belong properly to the subject treated of by the paper. Those other factors, as warmth, bad hygienic conditions, heredity, etc., were necessary before the bacillus tuberculosis could do its work.

Dr. Brush said that the work of Hirsch, quoted by Dr. Biggs with regard to phthisis among the tribes in the steppes of Russia and elsewhere, was simply a compilation. On the other hand, he had the authority of those acquainted in the steppes, including Medell and Daniel, that phthisis did not exist among those peoples.

He did not wish to be misunderstood. He did not hold that all cases of tuberculosis in man had their origin directly from the cow. He wished simply to say that wherever there were cows there was phthisis; that in the first place the disease began in the cow, and that if cattle were constantly absent from a country phthisis in the human race would cease to be. But where it had once become established, it would require some time probably for it to die out. He held, as Dr. Biggs and Dr. Loomis had expressed their views, that certain conditions were necessary for the development of the tubercle bacillus. At the same time the germ, and the disease to which it gave rise, must have a starting-point, which was in the cow. The fact that large numbers of soldiers died of phthisis, who received little milk and beef, did not invalidate his statement; tuberculosis existed among some of them to begin with, and spread rapidly on account of the unwholesome conditions to which soldiers were subjected. If men who used the milk and flesh of cattle were to contract tuberculosis as readily as small-pox or scarlet fever, few would now be living; yet it was from cattle that man in the first place got tuberculosis.

Dr. Porter inquired of the author how the breeding of cattle could be regulated to prevent phthisis.

Dr. Brush replied, by not inbreeding, and not breeding for milk.

Dr. Hadden, Chairman of the Section on Public Health and Hygiene, moved to take from the table certain resolutions recommending government control and prevention of yellow fever, and make them the subject of discussion at the first meeting in June. Carried.

Stated Meeting, May 2, 1889.

Alfred L. Loomis, M.D., President, in the Chair.

Dr. W. B. James opened the discussion with a paper entitled

THE RELATION OF THE TUBERCLE BACILLUS TO THE ETIOLOGY OF PULMONARY PHTHISIS,

in which he first traced the limitations of the term "tubercular" inflammation, and showed that evidence of its specific nature had been brought forward before the discovery of the tubercle bacillus. But while impressions of the infectious nature of the disease were not uncommon before 1882, it was not until that year that the specific microbe to which it owed its existence was discovered by Koch. It was with singular unanimity that the discovery of the tubercle bacillus as the cause of tubercular inflammation had been confirmed by subsequent investigators, so that to-day it was considered a fact well established in medical science that the presence of this microbe was absolutely necessary for the development of tubercular disease. The term pulmonary phthisis should be restricted to tubercular disease of the lungs. There were other conditions of the lungs, however, which during life one might not be able to distinguish from tubercular phthisis.

The question then arose whether the bacilli could alone produce phthisis, or whether contributory conditions were necessary for their growth? In other words, whether, for the acquisition of phthisis, some other element was necessary besides inoculation with the tubercular virus. Clinical experience showed that different individuals responded very differently to tuberculosis, as did also the same individual under different conditions. It was known that under treatment, for the most part climatic, some

cases of phthisis improved, and even entirely recovered. At the autopsies in the New York Hospital the past year, tubercular spots, more or less healed, were found in the lungs of more than half the bodies.

Whether a previous local lesion was necessary for the entrance of the tubercle bacillus was uncertain. Clinical observation and practical bacteriology went to show that the bacilli were capable of developing in healthy tissue. The number of bacilli or spores introduced, and their vitality, had an influence in the development of tuberculosis. Regarding the channel of infection in phthisis pulmonalis, it must be admitted that our knowledge of the lymphatics of the lungs was incomplete, yet it seemed probable infection might take place through them.

The author concluded with the statement that the evidence up to the present time seemed to indicate that the only factor necessary in all cases for the acquisition of pulmonary phthisis was the presence of the tubercle bacillus or its spores.

Dr. J. West Roosevelt continued the discussion with a paper on

THE RELATION OF THE TUBERCLE BACILLUS TO THE EARLY DIAGNOSIS AND TO THE PROGNOSIS OF PULMONARY PHTHISIS.

He began with the remark that the subject assigned him was one regarding which little need be said. He would not attempt to present new views. The first division of his subject was with regard to the value of the discovery of the bacillus tuberculosis in the sputum of patients in the question of early diagnosis of phthisis.

After stating business conditions which often rendered very important an early and positive diagnosis, he said that in phthisis there was often no tubercle so situated as to be connected directly with the air-passages, and consequently the absence of bacilli from the sputa could not be regarded as positive evidence that phthisis did not exist. It was indeed possible for extensive tubercular deposits to occur and yet no bacilli be discharged; it was also possible for so much bronchial discharge to take place that the bacilli might be overlooked in the large quantity of expectoration. Of course, the bacillus as positive evidence was invaluable. But the physician should not allow undue time to pass while waiting to find the bacillus, lest the patient lose his life before he made his diagnosis.

As seen in New York there was a number of cases of pulmonary phthisis in which the lesion until near the end seemed to consist simply of a deposit of tubercles, beginning usually in the upper lobes and gradually spreading and involving the lower lobe; with this tubercular deposit there was generally some pleurisy and bronchitis. In these cases there was not much tendency for the tubercles to break down early in the disease. There being practically no pulmonary consolidation, nothing at first but a few scattered tubercular nodules, the physical signs were of but little value. It was possible for such cases to progress very far, and yet give no distinctive physical signs. Unfortunately, for the same reason that the disease consisted of scattering tubercular nodules which did not break down early, the detection of tubercle bacilli was often impossible at the very time when its discovery would be of greatest value. It must be said that those cases presenting the greatest difficulty in diagnosis disregarding the bacillus, presented also the greatest difficulties in finding the bacillus. In many of them it was not to be found; the diagnosis must be made mainly from the history, and to a lesser degree from the physical signs.

As to the value of the bacillus in prognosis, he thought it could hardly be said to have any. Patients would be found going rapidly down, losing flesh and strength from day to day, whose expectoration contained but few bacilli; while, on the other hand, large numbers might be found in the sputa of those whose disease was advancing but slightly if at all. It was only a question of the freedom with which cheesy matter entered the bronchi. Dr. Roosevelt said he would venture beyond the bounds of his subject, and say that to administer antiseptic remedies in phthisis with the idea that it was rational treatment was ludicrous. In so terrible a disease the trial of any remedy not positively injurious might be justifiable, but one should not suppose for a moment that the administration of germicides could destroy the tubercle bacillus.

Dr. James Tyson, of Philadelphia, continued the discussion of the subject of the first paper. He could take no exception to the remarks of Dr. James. It was so generally acknowledged that the bacillus tuberculosis was responsible for tuberculosis, especially of pulmonary tuberculosis, that it seemed scarcely worth while to discuss the subject, yet it might be profitable to review the reasons for adopting any view of recent date. For a long time he could hardly believe that the bacillus tuberculosis could be responsible for pulmonary phthisis, but the evidence became too strong to longer doubt. Accepting this view of the etiology, he directed attention to some of the corollaries which grew out of it. First, tuberculosis was contagious, although only slightly so. As a recent observation going to prove this fact, he mentioned that of Flick, who found that Philadelphia houses in which consumption had occurred during the past twenty-five years were almost never isolated; that they were surrounded by other houses in which there was tuberculosis also, and in thirty-three per cent. of the houses in which there was pulmonary consumption there was more than one case. The second corollary was the communicability of tuberculosis by the alimentary canal.

As to inherited phthisis pulmonalis, we were forced to the explanation, in so-called hereditary cases, that transmission took place through the placenta. To say that it might be by impregnation of the ovum by the bacillus was pure speculation. As to the tenacity of life of the bacillus, it might live thirty days to six months.

Dr. H. M. Biggs thought experimental observations left not a particle of doubt of the causative relation of the tubercle bacillus to tuberculosis. There was one direct cause of tuberculosis, and only one, namely, the tubercle bacillus. That other factors had an influence could not be denied, but he believed their influence was only in diminishing tissue resistance. Without such factors as tubercular parentage, unfavorable hygienic conditions, depressed general vitality, ordinary exposure to germs of the disease might not lead to infection; but he believed that a sufficient dosage of the tubercle bacilli would cause the disease, no matter how healthy the individual, nor how favorable his surroundings. It was only a question of the introduction of a sufficient amount of the virus. Dr. Biggs laid stress on what he considered to be true, that in the question of heredity the disease itself was not transmitted, but rather only negative qualities, or weak organs, which made subsequent exposure to the virus particularly dangerous.

The conclusion could not be avoided that tuberculosis was a distinctly contagious disease, and consequently a distinctly preventable one. When these facts should be recognized, the great sanitary question would be how to restrict and prevent pulmonary tuberculosis. It would be necessary, in the first place, that all discharges of tubercular patients be disinfected, and that tubercular animals should be destroyed. The profession and the people should be impressed with the fact that tuberculosis could not spread except through the tubercle bacillus, derived from some other human or animal organism.

Dr. H. P. Loomis thought scarcely anything had been left to add to Dr. James' paper. He would repeat, however, that while in pulmonary phthisis there was, on the one hand, the tubercle bacillus, on the other we found what some chose to call predisposition, or lowered vitality, etc. This was a fact which should be borne in mind, although little definite was known regarding it. In a number of cases there was a hereditary predisposition to phthisis, while in others the condition favoring its development was acquired by habits of life, etc. He thought, however, there could be no question but what the tubercle

bacillus was the immediate cause of phthisis. In his experience at Bellevue Hospital there were, he thought, tubercular changes in at least sixty per cent. of all autopsies. He further stated that the clinical facts pertaining to phthisis had been accumulating many years, and one should be cautious in accepting laboratory researches which seemed to contradict those facts. The two must harmonize with each other.

Dr. Trudo showed specimens illustrating the growth of the tubercle bacillus on vegetables, and also in the lungs of animals after inoculation. The lesion in animals varied according to the quantity of the virus, place of inoculation, and environment.

Dr. William H. Thomson read a paper on

THE INFLUENCE OF THE MICROBE ON THE TREATMENT OF PULMONARY PHTHISIS.

He first discussed the subject historically. Among the attempts to cure phthisis by germicides, before the discovery of the tubercle bacillus by Koch, he mentioned the use of benzoate of soda in large quantities by inhalation, the idea being thereby to destroy the bacteria to which the tubercular process was believed to be due. After Koch's discovery of the bacillus tuberculosis, a new impetus was given this method of treatment, and trials were made with salicyn, iodoform, etc. At the International Medical Congress at Copenhagen the use of iodoform was freely discussed, some of the speakers preferring its administration internally, while others employed it in inhalation. The germicidal properties of iodoform were soon called in question; but notwithstanding the fact that experimenters had shown that the tubercle bacillus and other microbes would grow in it, this drug had held its place in antiseptic surgery, etc. It was not impossible that the products of decomposition of iodoform had some germicidal effects, yet Dr. Thomson had not been able to satisfy himself in its use in tubercular cases that it had any influence on the course of the disease. Injections of sulphuretted hydrogen per rectum had had no other effect in the hands of his house-physician than to cause some uncomfortable symptoms. Among other remedies which had been administered with the idea of obtaining their germicidal effect were tannin, acetate of lead, corrosive sublimate, creasote, etc., but no one of these could be proven to have an influence on the tubercular process. In experiments with them on animals, such doses could be employed as would cause poisoning and death of the animal without affecting the tubercle bacilli. The transportation of animals affected with tuberculosis to high altitudes had had no apparent influence on the disease. These facts seemed to show that the discovery of the specific parasite in tuberculosis would prove valueless, so far as treatment was concerned.

This, however, was no surprise to Dr. Thomson, for in other affections known to be infectious, as small-pox, scarlatina, and measles, he did not remember ever having seen a case aborted by medicine, antiseptic or otherwise. One might as well expect to stop the growth of weeds in a potato-field, without affecting the potatoes, by applying some substance to the soil. The weeds, when once they became implanted in the field, grew for the same reason that the potatoes grew, the pabulum for the one being the pabulum for the other, and to destroy the pabulum for the weeds would likewise starve the potatoes. The tubercular bacilli existed on the same nutriment which sustained the tissues of the body, and how could it be expected by drugs to change the nutriment of the one without changing the nutriment of the other? But was there no prospect, he asked, that Koch's great discovery might lead to some means whereby this most destructive disease could be combated? Some encouragement lay in the fact of the apparent interdependence of bacterial growths upon one another. He had probably been too much accustomed to regard the tubercle bacillus as a single entity which grew by itself, entirely independent of other conditions than its lodgement in a warm animal body. We were likely to forget that one micro-organism seemed to pave the way for another. Clinical experience demonstrated that pulmonary phthisis developed and advanced, rapidly or slowly, according to the activity or the non-activity of suppurative processes in the lungs. Hence, one of the plainest indications in treatment was to check suppuration. Another indication was to remove the pus as soon as formed; and a third, to prevent decomposition of the pus, for decomposing pus was as surely caustic to living tissue as were numerous chemical substances. He believed that some influence on these conditions was exerted by the use of creasote locally and by inhalation. While he had employed this remedy without much effect on the progress of many cases, yet on his records it showed a larger proportion of favorable results than any other single agent he had tried.

A second indication, which he would mention briefly, was the possible limitation of the tubercular process by promoting resistance of the tissues of the body to infection. Of the thousands who were exposed all their lives to the entrance of the tubercle bacillus into the body, only a few afforded favorable conditions for its growth.

Dr. Thomson stated, incidentally, that a good subject for investigation was the external physical characters of phthisical patients. Such a study might reveal a constitutional proclivity to infection. He mentioned some of those characteristics which distinguished phthisical patients from those suffering from chronic bronchitis.

Dr. Louis Waldstein continued the discussion on the subject of Dr. Roosevelt's paper. He said he could only give some examples in proof of the correctness of Dr. Roosevelt's conclusions. The presence of the bacillus tuberculosis was of the greatest importance as a positive sign of tubercular disease; but we could not assume with certainty that such disease did not exist when the bacillus could not be found in the expectoration. A young man was taken with a cough, began to emaciate, but various physicians pronounced his trouble of no importance, viewing his cough as the result of an irritable throat. Later on, expectoration set in, and became profuse, but he was treated for bronchitis. One physician had repeatedly examined the sputa, with negative results. He was sent to Dr. Waldstein, who, on examination of the chest, was unable to come to any conclusion regarding the gravity of the disease. He examined the sputa at intervals, and the fourth or fifth time detected tubercle bacilli in large numbers, which settled the question of diagnosis. After several months distinct physical signs of phthisis were present at the apex of the lung. In other cases repeated examinations of the sputa for bacilli had been negative, notwithstanding physical signs of grave and progressive disease.

In regard to prognosis, he cited the case of a young, healthy-looking man, who, during business hours, had an attack of severe pulmonary hemorrhage, which was repeated twice within twenty-four hours. Three or four weeks before, a careful examination for life insurance had given no indication of pulmonary disease; yet microscopical examination of the expectoration, mixed with blood, showed large numbers of tubercle bacilli. The man was sent away, recovered, and repeated examinations of the chest and sputum, after his return, were quite negative. Thus, we must subscribe to the assertion of Dr. Roosevelt, that the presence or absence of the bacillus tuberculosis was valueless with regard to the prognosis of the case.

Dr. B. F. Westbrook, of Brooklyn, thought the gentlemen who had discussed the question of etiology had somewhat overstated their case. He did not think the tubercle bacillus was to be regarded as the only cause of tuberculosis. To be sure, the gentlemen who had taken part in the discussion had not stated it in exactly that way, but Dr. Biggs had come very near it. The causation in the animal organic world was very complex. That fact had been recognized two thousand years ago by Aristotle, who wrote a treatise on the subject, showing that different causes might be combined to produce a

given effect. While, according to the knowledge of the day, the tubercle bacillus was the only original exciting cause of pulmonary phthisis, yet it was not the only cause aside from the exciting. To say that it was the exciting cause was stating only one factor in the problem of causation. There were many others, and he thought that practically the others were the more important, for the tubercle bacillus could not be excluded, while perhaps some of the other causes, if they were only thoroughly investigated, might be excluded.

With regard to the value of the tubercle bacillus as positive evidence in diagnosis, he had never seen a case in which it could be found by the microscopist when the physical signs taken with the history did not afford sufficient evidence without it. But there were some cases in which examination of the sputum had been of some aid to him in determining whether primary tubercular pleurisy existed.

With regard to prognosis, if he had a case of pulmonary disease presenting signs of consolidation and excavation, with long-continued cough and purulent expectoration, and did not find tubercle bacilli in the copious expectoration, he would give a favorable prognosis; he would conclude that it was a case ordinarily known as chronic interstitial pneumonia, and that the prognosis was good. If in the course of such a case tubercle bacilli appeared, it would be a bad sign. Its presence would usually be accompanied by fever. Aside from that, he would regard the number of bacilli as of no importance.

Treatment based on the discovery of the bacillus tuberculosis, aside from cleanliness, had been valueless, if not harmful. Cleanliness and fortifying the constitution of the patient to withstand the disease were indicated; not poisons for the destruction of the bacilli.

Dr. F. P. Kinnicutt said he could only confirm the statements of Drs. Roosevelt and Thomson with regard to influencing the life of the tubercle bacilli by germicides. Antiseptics were only of value in the way of cleanliness and removing morbid secretions. They might be of value in stimulating the nutritive processes, but not in exerting a direct influence on the bacilli. Such, he thought, was the explanation of the benefit derived from creasote. It had often seemed to him that the principal benefit in pulmonary phthisis came from attention to details and strict supervision over the patient's daily life.

SECTION ON THEORY AND PRACTICE OF MEDICINE.

R. C. M. Page, M.D., Chairman.

Stated Meeting, April 16, 1889.

Dr. E. A. Bracklow read the report of a

CASE OF PURPURA HÆMORRHAGICA,

occurring in a young lad, with exhibition of the patient.

Dr. M. Allen Starr read a report on

THE USE OF SIMULO IN THE TREATMENT OF EPILEPSY.

Dr. E. D. Fisher said that he had had no practical experience with the use of the drug, as its costliness was such that he had not felt justified in trying it in dispensary practice. His attention had been first directed to it by Dr. White's article in *The Lancet*, in March, 1888, referred to in the paper. It would certainly be a great advantage, he thought, if we could get any agent which would at all take the place of the bromides in those cases of epilepsy in which the use of the latter was attended with bad effects. The tincture of simulo, so far as employed, would seem at least to have no bad effects. Dr. Starr had expressed no opinion as to its mode of action in cases of epilepsy, and he thought some information on this point was desirable, as nothing had as yet, so far as he knew, been published regarding it. On the whole, simulo seemed worthy of a further trial. In some of the cases reported it appeared to do well in connection with the bromides, and he would like to inquire if Dr. Starr had ever used it in this way.

Dr. Landen Carter Gray said that he could only agree with Dr. Starr as to the uselessness of simulo in epilepsy. He had tried it in several cases (at least four or five), both alone and in combination, and he had obtained from it no results except such as one could get in almost any case of epilepsy by changing the drugs employed. This was merely a temporary effect, and the same could be obtained by any one of almost a hundred other agents. He had therefore discontinued the employment of simulo, as it had, in his hands, proved so nearly useless as not to afford sufficient encouragement to give it a more extended trial.

Dr. Starr said, in answer to Dr. Fisher's question, that he had not tried simulo in combination with the bromides.

Dr. F. W. Jackson read a paper (see p. 510) on

THE SIGNIFICANCE OF THE CREPITANT RÂLE.

Dr. J. West Roosevelt said that he had been correctly quoted by the author of the paper, but since the publication of the article referred to he had seen reason to modify his views somewhat. Authors are very apt to speak rather wildly on this subject, some claiming that the crepitant râle was produced only in the air-vesicles, some only in the pleura, and others that it might be in either. It was a matter of importance to understand just what was meant by crepitant râle. If Laennec's definition was to be accepted, that it consists of a series of sharp, crackling sounds heard at the end of inspiration, and apparently near the ear, it must be admitted that the crepitant râle is met with in phthisis, in severe bronchitis, in pneumonia, in dry pleurisy, and in œdema of the lungs. He explained that he was referring to the kind of râle which is heard only in puffs, and is of a high pitch, the true crepitant râle. As to the cause of the production of this râle, he did not feel prepared to express an opinion. There could be no doubt, he went on to say, that there was a distinct movement of the air in the vesicles. In pneumonia we talked of the solidified lung as not moving at all; but either the lung did move or else the pleura was immovable. A solidified lung could be expanded to some extent, since the smaller bronchi occupied a considerable space. He would be inclined to deny, therefore, that the crepitant râle cannot be produced in the air-vesicles. There could be no question, however, that the râle was also heard in pleurisy, and hence it was necessary to depend on other signs in order to differentiate between pneumonia and pleurisy. As to Dr. Leaming's teachings, he thought it was a great pity that so much of what was of absolute value should be mixed up with that which was not proven. Frequently in the dead-house he had found the pleura perfectly healthy in cases in which the crepitant râle had been distinctly heard a few hours before. Yet, at the same time, he believed that he was perfectly right in attributing the greater number of crepitant râles to the pleura. As to Germain Sée's suggestion, to look for the râle at the level of the seat of pain, he had repeatedly found at autopsies that there was no disease whatever in the immediate vicinity of the location where the pain had been experienced by the patient.

Dr. W. W. Van Valzah said that in his experience the crepitant râle was to be found not only in pneumonia, but also in pleurisy, in œdema of the lung, and in œdema of the pleura; and he did not, therefore, consider it pathognomonic of pneumonia. It was largely moist in character. As a rule, the pleuritic crepitant râle could be heard over a much less extended surface than the pneumonic.

The Chairman, Dr. Page, said that he had always taught that the true crepitant râle was produced, as Laennec believed, only in the lung, and that analogous sounds heard in the pleura and in various pathological conditions should not be so designated.

Dr. Roosevelt asked if such analogous sounds could be distinguished by the ear from the true crepitant râle,

and Dr. Page replied that they might not present any difference whatever to the ear, but differed only in the mode of their production.

Dr. Jackson, in bringing the discussion to a close, said that it was greatly to be regretted that we were not in possession of a more accurate definition of the crepitant râle than had as yet been attained. Among his students he was in the habit of using the definition of Dr. Roosevelt, that it is a very fine râle which is heard at the end of inspiration. It was not, however, altogether satisfactory to himself, and Walshe taught that the râle was heard at the beginning of inspiration.

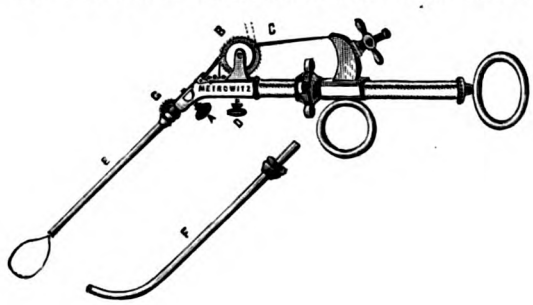
New Instruments.

A NEW POLYPUS SNARE.

By GEORGE D. HALL, M.D.,

GALVESTON, TEXAS.

The body of the snare, which is made of steel, thus rendering it very strong, can be detached from the cannula E at D. The wire having been placed around the growth is tightened by means of the stop-screw. If the operation is to be quickly done the milled nut is turned and the growth severed as usual. If it is desirable to cut the growth very slowly, as is often the case in hypertrophies of the posterior ends of the turbinated bones, the growth being engaged, the wire-holding screw A is tightened and the wire cut a little behind the ratchet-wheel B;



then bent to prevent slipping, the body is detached from the cannula, the screw A loosened, the wire is drawn home, as slowly as may please the operator, by means of the ratchet B.

The advantage which I think this instrument possesses over others lies in the fact that the cannula part of the instrument is in itself a complete snare, and being lighter and shorter than any other, does not require the patient to hold it up like other and heavier snares, while its own weight in position does not make it burdensome.

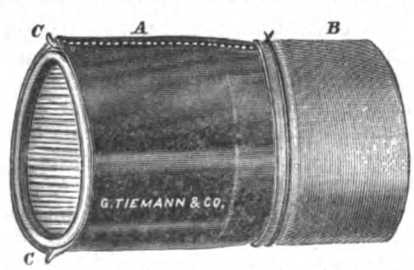
April 6, 1889.

A MODIFED ALLIS ETHER INHALER.

By JOSEPH W. EDDY, M.D.,

OSWEGO, N. Y.

After using a number of kinds of ether inhalers, I have come to the conclusion that the Allis inhaler is the best;



C, C, top, which comes off; *A*, leather jacket; *B*, rubber face-piece.

there being no valves to get out of order, and the construction is simple; but I found that where it was needed for a number of patients, as in a railroad accident, it generally became too dirty in a short time to use, owing to the presence of saliva and vomited matter, and taking it apart to clean and put in a new canton flannel bandage was very tedious and trying to the hands, especially in removing and putting on the rubber cap. In my modification the canton flannel is not threaded through between the bars, but slipped over as the top comes off, and then in place of the rubber cap over the bars I use a black patent-leather jacket, over one end of which is slipped a rubber face piece, which has the end going over the patent-leather jacket distended by a metal ring or band so that there is no trouble in introducing it over the jacket. Surgeons will find that this inhaler can be taken apart and the bandage changed in a few moments.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 27 to May 4, 1889.

Forwood, W. H., Surgeon Medical Department, Fort Snelling, Minn. Based on surgeon's certificate of disability, leave of absence for one month, with permission to leave the limits of the Department, is granted. Par. 1, S. O. 35, Headquarters Department of Dakota, St. Paul, Minn., April 8, 1889.

Borden, William C., Captain and Assistant Surgeon U. S. Army. Relieved from duty at Fort Ringgold, Texas, and ordered to report to the commanding officer at San Antonio, Texas, for duty at that post. Par. 7, S. O. 100, A. G. O., May 1, 1889.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending May 4, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	4	1
Scarlet fever	268	33
Cerebro-spinal meningitis	3	3
Measles	126	7
Diphtheria	149	57
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

Rheumatismal Metatarsal Osteo-periostitis.—The apparently unrecognized, or but little recognized, disease of infantrymen is written of in an interesting article in the *Revue Générale de Clinique et de Therapeutique*, by Dr. Charles Eloy. It may be considered as an œdema localized at the head of the two or three metatarsal bones of the centre of the foot, with an accompanying osteo-periostitis. The cases on record number 20, 8 having been reported by Pauzat in 1887, 11 by Poulet, 1888, and one by Eloy. Of the 19 cases of Pauzat and Poulet, 2 were old soldiers. In all of the cases the symptoms came on after marching. In all the cases there were two cardinal symptoms—painful œdema and periostitis. The œdema was first manifested, after one or more long marches, by a swelling limited to the level of the dorsal face of the two or three intermediate metatarsals, and sometimes invaded the root of the toes or effaced the tendinous projection of the extensors. It is of medium hardness, depressible under the finger, and accompanied by slight elevation of the temperature. The pain accompanying it is not spontaneous, but is provoked by pressure

and by movements. There is a very manifest arthralgia of the metatarso-phalangal joints when a toe is seized with a pair of forceps and repeatedly flexed. The localized œdema and the pain are the signs of the beginning of the affection, and characterize the first period. After some time periostosis begins. The finger, and sometimes the eyes, of the observer can detect swelling of the metatarsals. This periostosis may appear as early as the fourth day, but usually not until the twelfth or fifteenth day. Whether it comes on early or late, the periostosis persists for several weeks, or even months after the disappearance of the œdema, the diminution of the pain, and the return of the tendinous prominences to their normal form. These phenomena characterize the second period —the osteoplastic phase. There are two views as to the pathogenesis of this affection. On the one hand it is claimed that it is a traumatic periostitis; on the other, it is thought to be an osteo-periostitis of rheumatismal origin, and consequently the local manifestation of a specific affection. Pauzat excludes all constitutional influence. His patients were young men, aged twenty-one or twenty-two, robust, vigorous, with well-formed feet, but unfitted by previous occupation for long marches. Fatigue, then, seems to be a predisposing cause. Seven of the eight cases reported by Pauzat were those of soldiers recently enlisted. But it is a curious fact that the affection was never bilateral; one foot only was affected, and one as often as the other. Is it not possible, however, that men that have not learned the whole art of walking perfectly use one foot more than the other—put more strain on one foot? Some foot-ball players, for example, can kick with only one foot, while others use each foot with equal facility. Can the shoes be responsible for the affection? In view of the small number of soldiers affected this does not seem probable; but it would be interesting to have some statistics from the Spanish army, in which, we believe, the soldiers use sandals on the march. The prognosis of the affection is serious, according to Pauzat; good, according to Poulet. Pauzat's unfavorable opinion is based on the fact that the osteo-periostitis places the patient out of actual service for a considerable time. Poulet bases his prognosis on the fact that the malady does not prevent the patient from entering the service again. The treatment of the affection, according to Eloy, consists in rest, elevation and immobilization of the foot, and topical applications and compression. Topical revulsives, such as the iodides, should be used in the osteoplastic stage of the disease.—*The Journal of the American Medical Association.*

Blood-poisoning in Medical Students.—It is reported that several fatal cases of blood-poisoning have occurred recently among the Paris medical students practising in the dissecting-room of the École Pratique. It appears that, in consequence of a decree of the Municipal Council, surviving relatives, who formerly paid a fee of seven francs to have the bodies of those dying in hospitals, can now receive them gratis. The dearth of subjects which is the result of this change has led to greater putrefaction than usual, and an arrangement is now being made for the sending of bodies from Lyons and other large cities.—*Medical Recorder.*

The Danger of Reporting Strange Cases.—We referred not long ago to a case of delivery on the rail, reported by Dr. Osler, and now we have to chronicle the sad sequel to this case as related by Dr. Osler himself, in the *Montreal Medical Journal.* The unfortunate man writes: "A few days ago I received an urgent summons to come at once to an address at the northern part of the town. On arrival I found my *confrère* looking very tired and distressed after a night with a primipara. He greeted me with the information that one child had been born, but that he did not know what to do about the second, as he believed there was hour-glass contraction of the uterus. I assured him that our course of action was clear; we sent at once for an obstetrician. I had difficulty in convincing him that I was not a professor of the art, but he persisted that my reputation was associated in some way with obstetrics, and brought up that northwest case. What I have suffered on account of that baby; to be jeered at by the French journal, to be called by the editor of The Medical Record a narrator of funny stories, to be referred to by my friends as Munchausen—these things have been hard to bear, but on the strength of that case to develop a consulting practice in obstetrics, is indeed a warning. Hereafter I shall stick to my last."

Early Twin Embryos.—Twin pregnancies are of great interest both to the obstetrician and to the embryologist. True twins are developed from one yelk, and it has long been known that the embryonic appendages of one embryo may cut off those of the other from the placenta, and thus give rise to remarkable malefrmations. The placenta is common in all one-yelk twins. The simultaneous development of twins from two ova is also an interesting subject. At a meeting of the Berlin Obstetrical and Gynecological Society, Dr. Gottschalk exhibited a pair of twins aborted at the second month. They showed very marked differences in their degrees of development. The mother was thirty-one years of age, weakly and anæmic; her youngest and second child was aged two years. She aborted eight weeks after the cessation of the catamenia, from no particular cause. The larger ovum was expelled into the vagina without aid; the lesser had to be detached from the fundus with the finger. Both ova were fresh and uninjured. The bigger was just under two inches broad and over three long; the smaller an inch long and four-fifths of an inch broad. The extremities of the larger embryo were completely developed, those of the smaller formed mere buds. The relative sizes of the placentæ corresponded to the development of the ova. Dr. Gottschalk did not consider that he had to do with a case of superfœtation. He traced the lesser ovum to the same period of ovulation as its brother, considering, however, that it was fertilized somewhat later.—*British Medical Journal.*

A Sure Remedy against Sea-sickness has at last been discovered by a physician of Vienna, Franz Heller by name. It consists simply in keeping the body level by following the motions of the vessel, bending the right knee as the vessel rises to that side, and then the left as the motions are reversed. It might be somewhat tedious, not to say tiresome, to follow out this brilliant suggestion during a voyage from New York to Liverpool.

A Novel Cure of Tapeworm.—A writer in *La Clinica Navarra* relates the case of a man who had received a stab-wound in the abdomen involving the intestine. The injured portion of the gut prolapsed through the wound. The surgeon who was called to attend the sufferer noticed something issuing from the opening in the intestine, and recognized on closer inspection several segments of a tapeworm. He succeeded in extracting the worm entire, which measured over sixteen feet in length. The intestine was then sutured and returned to the abdominal cavity, and the man made a good recovery.

Boyish Appetite.—The relations between appetite and digestion is in general a fairly definite one. At the same time it must be allowed that this rule is largely modified by exceptions. Many persons are subject to morbid cravings to eat, which food cannot satisfy; and most of us know something of the appetite of idleness, of habit, or of nervous disturbance—the latter bearing a suggestive likeness to the desire for stimulants or the fragrant weed, taken to relieve mental depression. Apart from such considerations, however, there are obvious variations in the degree of normal appetite in different individuals and at different periods of life. The man of sedentary habits cannot expect to compete with one who spends a life of movement out of doors. The man and the woman differ, so do the younger and the elder, and in a notable

degree, the boy and the man. The vigorous appetite of boyhood is virtually a synonym of health. A rate of daily consumption which would in most men be gluttony is in young growing lads almost too common to attract notice. The explanation is not difficult when we take into account two chief conditions of existence at this age—the growth going on in every organ and tissue, and a very liberal allowance of active bodily exertion. Under the circumstances a sparing rule of diet would be unnatural and injurious. There is, of course, a limit even in childhood which it is trite to say is often and wrongly exceeded. There is no age, however, at which this form of excess is so pardonable. Whatever the surplus of food taken, most of the self-indulgent youngsters have been provided by nature with a power of disposal which may largely be relied upon to correct its consequences. Measures of restriction are most wise when they are used to regulate rather the wholesomeness of food and the times of eating than the absolute quantity consumed. It is at a later stage that we may require to apply strictly the familiar rule that one should eat to live and not live to eat. A degree of apparent Philistinism in the matter of wholesome food and drink is in the young both usual and judicious.—*The Lancet.*

A Genito-urinary Surgeon of this city states that he has been successfully treating deaf-mutes with sounds.

Enucleation of the Eyeball.—Dr. Coppez, of St. John's Hospital, Brussels, publishes in *La Clinique* the details of a method of enucleation which he considers to be easier and simpler than the methods of Bonnet and of Tillaux now in use. The patient having been anæsthetized and the eyelids separated by a speculum, a thread is passed transversely through the cornea by means of a curved needle; the ends of the thread are knotted and the loop held in the left hand. By traction on this loop the eye is drawn slightly forward, and with a curved scissors the conjunctiva is divided close to the corneal edge. The subconjunctival tissue is then torn through, and the tendons of the recti muscles come into view and are divided, next the tendons of the oblique muscles, and finally the optic nerve. Dr. Coppez claims for his operation that it may be practised with fewer instruments—a curved needle, scissors, and a speculum; that the optic nerve may be divided more directly and at a greater depth in the orbit, which, in the case of malignant tumors, is of great importance; and that the consequent hemorrhage is less considerable than in the ordinary operations. The only objection to it, he thinks, is that the globe might be rendered flaccid by the escape of the aqueous humor through the needle-holes; but that is of little importance.—*The Lancet.*

Cupping-glasses in Depressed Fracture of the Skull.—Dr. Piper reports the case of a child, seven years of age, who had received an injury resulting in a depressed fracture of the left parietal bone. The treatment consisted in the application of a cupping-glass over the seat of the fracture, by means of which the depressed portion of bone was brought into its proper position. —*Medical Register.*

Maggots in the Uterus.—Dr. J. F. Haines reports the following case in *The Lancet* of January 5, 1889. Some months ago I was called to see Mrs. P——, who stated that she had had "a miscarriage" three days previously, and was now suffering from considerable pain. There was an intensely fetid discharge, and, on making an examination, I was surprised to discover a number of maggots in the vagina. I injected a solution of carbolic acid, which, however, had but little effect, only a few maggots coming away with the return of the fluid. I then used as an injection a solution of perchloride of mercury, which killed and brought away a very large quantity of them. The patient now expressed herself as considerably relieved, and, there being no urgent symptoms, I prescribed a mixture containing tincture of opium and liquid extract of ergot. Next day I repeated the injection of the perchloride, and on the following day a mass about the size of a small orange was expelled, which was riddled with holes, and contained a number of dead maggots. I was unable to satisfy myself as to whether it contained any fœtal structure or not. After this the patient steadily improved, and made a good recovery.

Poisoning by Citrate of Caffeine.—Mr. T. Geraty reports the following unusual case in *The Lancet* of February 2, 1889. At 9 A.M., before breakfast, a lady suffering from migraine took a dessertspoonful (equal to 200 grains) of pure citrate of caffeine in mistake for the granular effervescing form of the drug. I saw the patient immediately after the accident; the only complaint she then made was as to the nauseating taste. I encouraged her to eat a little porridge before having an emetic. As soon as the porridge was eaten, faintness and nausea came on; and a quarter of an hour after the reception of the poison there was semi-unconsciousness, grave depression, extreme pallor, all the muscles completely relaxed, and a decided inclination to sleep; pulse slow, soft, and very compressible; respiration slow and sighing. The treatment adopted was an early emetic (one-twelfth of a grain of apomorphia), which acted at once and very completely, small quantities of brandy, the recumbent position, and warmth. I may say there was a well-marked rigor about an hour after the caffeine was taken. Consciousness was recovered about an hour and a half after emesis, and the faintness passed gradually away.

Treatment of Tonsillitis in the Early Stages.—For a case of quinsy, seen in the first twenty-four hours, Sajous recommends a gargle of a teaspoonful each of ammoniated tincture of guiac and milk. The gargle is to be used every three hours and then swallowed. After the third or fourth dose the patient is usually much relieved. If the remedy cause diarrhœa it should be reduced to half a drachm of the guiac with one drachm of milk.

The Dose of Salicin.—According to Dr. McLagan (*The Lancet*), salicin must be given in large doses in rheumatism, from twenty to forty grains every hour, until there is decided evidence of its action. Generally before an ounce is given improvement has taken place, and as the symptoms decline the dose may be diminished.

Juvenile Inebriety in Austria.—The temperance of Austrian women has long been proverbial; but, if the accounts recently published respecting the intemperance of boys and girls in that country are reliable, we fear that Austria will not long continue to sustain its former good character for feminine sobriety. So serious and widespread has inebriety been of recent years among school children that the Vienna School Board have, though hitherto ineffectually, been making strenuous efforts for the prohibition of the sale of intoxicating drinks to children. The Board has just resolved to invoke the intervention of the Government, and a bill is to be laid before Parliament during the present session to prohibit the selling of intoxicants to boys and girls under fifteen years of age. So alarming is the present state of matters that the appearance of a boy at school in a state of drunkenness is by no means a rare sight. During the winter poor children are often sent to school with only a glass of the cheapest spirits for breakfast, partly to allay hunger and partly to "keep out the cold"—that venerable delusion which still lingers in England. Slav children of the tender age of five and six years are so "seasoned" to alcohol from infancy by the administration of small quantities in milk that these youthful scholars can take a liberal dram without showing any symptoms of intoxication.—*British Medical Journal*, November 17, 1888.

Now that the college clinics have ceased for the season the younger practitioner will have an occasional chance for a stray patient.

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Original Articles.

"IS MORE CONSERVATISM DESIRABLE IN THE TREATMENT OF THE JOINT DISEASES OF CHILDREN?"[1]

BY A. B. JUDSON, M.D.,

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THE established method of treating the so-called tubercular diseases of the joints is by opening the joint and excising or scraping the diseased bone. This method, called when it was new the conservative method, superseded amputation, and was indeed a great advance. It has occurred to me to present to you a few considerations which favor a still further advance in conservatism, as applied to the treatment of these diseased joints in children. Will it do, for instance, to withhold the knife altogether? If we answer in the affirmative we differ from the active operating surgeon of the present day, who views with indifference the opening of the cavity of a joint, or that of the abdomen, thorax, cranium, or vertebral canal. Taking a general view of operative surgery, this most attractive and popular branch of our science, the most interesting feature is the sudden relief of pain or the rapid transition from desperate peril to safety which sometimes follows a bold operation. As Sheridan turned disaster into victory in the Shenandoah Valley, so the bold surgeon makes his incursion into the valley of the shadow of death and returns with the trophy of life and health. But it may well be asked whether operating on a joint affected with chronic osteitis is ever followed by speedy restoration of health and function. Is it not true that the patient is so long in making a recovery that the operation always fails as an instance of brilliant and successful surgery? If the wound of operation or the sinus would only close, and the patient be well in a month or three months or six months, it might be said that the operation is justifiable and praiseworthy. But how many such patients linger a year, two years, three years, or longer, after the operation? And when finally they recover it becomes evident that the only effect of the operation, if the patient escapes with his life, has been to forestall needed mechanical treatment through overweening belief in the sufficiency of the knife, and perhaps to needlessly shorten the limb or give undue mobility to the joint.

It may be said that such a miscarriage of surgery is the result of a failure to remove all the diseased tissue. Must we, then, in the treatment of these cases, proceed as if we were dealing with a malignant affection? The great number of scarred but healthy cripples who have recovered without competent surgical attention excludes the thought of malignancy, and even indicates that in every uncomplicated case a point will certainly be reached when the destructive is replaced by a reparative process.

It is not to be denied that it would be well if, in some instances, the diseased parts could be entirely removed. But is this ever done, or can it be done? Theoretically their removal is desirable in the very earliest stage of the disease. But the subacute focus in which the disease has its origin lies hidden in some unknown part of the cancellous tissue, we know not how long, before it produces symptoms. It may even be resolved before its presence is recognized. And when the symptoms declare themselves, it is not clear at first which bone of those forming the joint is the seat of disease, and when that point is settled we are at a loss to determine the number and location of the foci. The upshot of these baffling conditions is that the operation is necessarily postponed until the foci break down into pus and an abscess forms, and in this stage the exploring surgeon usually exposes a great quantity of diseased tissue which gave no external indication of its presence. He finds that thorough removal of all that is diseased, with nothing left in the extensive wound but healthy tissue, is an impossibility. He not only has difficulty in deciding between healthy and unaffected bone, but he also runs the deplorable risk of extirpating portions which are granulating and cicatrizing. He knows not how many foci not yet broken down lie beyond the reach of his excavations. In view of these embarrassments, it is not strange that the expectation of a rapid recovery after operation in the so-called third stage is always disappointed.

There is one consideration which probably has weight in the minds of those who have to decide the question of operating or not, and that is the dread of visceral degeneration—the amyloid liver and kidney—as the result of long-continued suppuration. Doubtless many an operation has been undertaken in cases where an immediate successful result has been out of the question, simply for the purpose of diminishing the flow of pus. This source of danger I have had no reason to take into consideration in practice. In the few patients who have had degeneration of the liver and kidneys, this condition has seemed to be an expression of a vice of constitution of which the pernicious course of the joint disease was but another expression. I may add that I have seen reason to believe that serious disease of these organs, especially of the kidneys, occurring in the class of cases under consideration, is not always or generally fatal.

In general terms, the performance of severe operations on the skeleton of a child is to be avoided on the ground that the patient is growing. All the parts and functions should be preserved rather than sacrificed or abridged in the slightest degree. The smallest piece of tissue or the least remnant or fragment of an ability is to be preserved and cherished, because it will not only have the growth which belongs to it in common with the rest of the body, but a growth stimulated by the effort which nature always makes in such circumstances to supply a deficiency. An adult may demand a rapid recovery at the risk of loss because his time is valuable, but growing children have time to spare. If they are out of school for a while they catch up quickly when they return to their books. If a boy is so equipped that he is free from pain and can be out-of-doors, he is not much cast down or impeded by the presence of a diseased or even a suppurating joint. An unopened abscess or a discharging sinus is often looked upon by the family friends of the patient as a most distressing and dangerous complication, the one feature of the case which calls for sympathy and strenuous treatment, when it is in reality but a secondary and unimportant incident. The sinus, no matter how wide and deep, will permanently close when the diseased bone which is the source of the pus is cicatrized, and not before, and the diseased bone cannot be successfully treated by impracticable efforts at extirpation, still less by attempting to treat the abscess or sinus. When it is proposed to see whether the progress of the disease cannot be cut short by oper-

[1] Read before the Orange Mountain Medical Society, April 12, 1889.

ating on either the bone or the soft parts, at that very moment, in all probability, the bone is on the way to spontaneous recovery to be followed by permanent closure of the sinuses. The insertion of drainage-tubes, the injection of antiseptic fluids, and the other resources of minor surgery will but cause discomfort—they cannot hasten the time when disintegration ceases and repair begins.

Are we, then, powerless in a case of this kind? By no means. If we can rightly settle ourselves in the opinion that chronic osteitis of the joints in children is an affection the duration of which cannot and need not be abruptly shortened, we are in a more favorable position to inquire what we can do to promote and stimulate the natural process of repair and provide for the greatest possible ultimate symmetry and ability. There is, however, another particular in which we will perhaps have to free our minds from a preconceived notion. I refer to the expectation of seeing our patients recover without impairment of form and function. Patients do not pass the ordeal of chronic osteitis of the joints with normal symmetry and ability. I do not here refer to those rare cases in which the osteitic focus is resolved in its early stage.

Having thus cleared the ground, so to speak, by admitting that these cases cannot be cured, in the popular meaning of that term, and that such a cure as can be obtained is to be sought by relying on the slow but sure processes of natural repair and not by operating, we are in a position to construct or outline a plan of treatment as best we may. In the general management, which is a most important part of the treatment of a child affected with chronic joint disease, I have found it difficult to keep the parents from acting on a false notion of the severity of the disease and the peril of the patient. It is not easy to convince the parent of a child who wears a splint and has purulent collections and discharges that such a child should be allowed to run about at will and to eat all kinds of food. But, practically, a child in this condition should be incited to activity. He should almost be driven from his bed and from a habit of invalidism. If the "running sores" are viewed with apprehension by the adults of the family the child will suffer in imagination, but if they are made light of he will soon learn, what is the fact, that they are painless and readily tolerate disturbance and even violence, and they will not then prevent him from enjoying life with his play-fellows and fortifying his appetite and general condition with fresh air and the wholesome activities of childhood. Such a child should, as a rule, be an "office patient;" if treated at a hospital he should be an out-patient. A child leading such a life would expect, and should have, the diet of healthy children. There will be days when he will be overcome by lassitude and nights when he will lose part of his sleep through pain. During these periods, which diminish in length and frequency as the case approaches recovery, the patient will be less active, the regulation of the diet will call for special attention, and judicious medication will be required. When the transient depression has passed there is all the more reason for encouraging a return to activity.

But many of these patients will be unable to be active unless we restore to them the power of locomotion of which they are temporarily deprived by the disablement of a limb. The first point which claims practical attention when local treatment is begun is the necessity of fixing the diseased joint. If this can be done a great deal of pain and discomfort is arrested, and not only is pain arrested but we thus apply to the inflamed joint the most widely recognized antiphlogistic, arrest of function, just as we forbid the use of an inflamed eye or arrest the motion of the inflamed pleura by surrounding the chest with a strip of adhesive plaster. And when the joint is securely fixed it becomes evident that the patient is not only benefited locally but also generally, because now he can move about without disturbance of the joint and is able to climb the stairs in-doors and make the wished-for excursions out-of-doors.

Thus far we have made no distinction between the joints of the upper and those of the lower extremity, but it will be necessary to make this distinction because we all know that the former are much less frequently and less seriously affected by osteitis than the latter. For instance, we have no shoulder disease comparable in frequency and destructiveness with hip-disease. White-swelling of the knee has, from the beginning of surgery, been a reproach, but there is no affection of such frequency and severity in the elbow. I believe the difference depends on difference in mechanical environment, and chiefly on the fact that the upper extremity, being pendent, is exempt from the pressure and concussion which, from the nature of the case, fall to the lot of the lower extremity in standing and locomotion.

A glance at the statistics of orthopedic institutions reveals some interesting facts bearing on this question. From the last annual reports of two such charities in New York City it appears that in a single year 577 patients were treated for disease in the hip, 181 in the knee, 6 in the shoulder, and 8 in the elbow, making an aggregate of 758 patients with disease in the large joints of the lower, and only 14 with disease in those of the upper extremity. The disproportion is not so extreme as it appears to be at the first view, because doubtless many cases of disease of the shoulder and elbow are retained in general hospitals; but it will probably be agreed that in the great majority of cases of chronic articular osteitis the affection is found in the lower extremity. The first and most obvious inference is that the occurrence of the incipient osteitic focus is rare in the upper and common in the lower extremity. But is this a reasonable inference? Is not the more remote inference more likely to be correct that foci occurring in the cancellous tissue of the upper limb are resolved at an early stage and before recognition, because they are, from the nature of the case, exempt from the violence which in the lower limb forbids early resolution. The practical lesson to be drawn is the necessity of imitating in the lower the mechanical environment of the upper limb. The lower extremity should be made a pendent member by some form of crutch, axillary or perineal, from the earliest recognition of the disease till its resolution. In this way we not only relieve and prevent pain, but we also apply to the inflamed joint the most widely recognized antiphlogistic arrest of function—and what function of bone and joint in the lower extremity is more arduous and exacting than that of enduring the weight of the body, standing and in locomotion? And when the painful limb is relieved from this burden it becomes evident that the patient is not only benefited locally but also generally, because he is now able without apprehension to do with considerable ability his share of out-door sports.

I will not on this occasion intrude on your attention the details of mechanical treatment, because they cannot be well appreciated in the absence of clinical demonstration, and also because it is in the power of every practitioner to apply the principles which I have referred to and which are detailed in many publications.

While it would be difficult to find a case of chronic articular osteitis in which mechanical treatment would not meet with general approval, the majority of surgeons probably choose to combine with it some form of operative treatment. For my part I would make mechanical treatment an essential element in the management of every such case, recognizing the possible value of the knife, but not seeing, or expecting to see in ordinary practice, cases which would be benefited by its use. I have not cited cases and have not tried to make a formal argument, but have sought to present in an unstudied way the impressions and convictions which practice and observation have led me to in the hope of turning your thoughts in the same direction.

4 East Twenty-fifth Street.

THE ETIOLOGY AND TREATMENT OF PNEUMONIC FEVER.[1]

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It is with much hesitation that we bring before you the subject of pneumonia; in our medical journals it holds a prominent place at this time, and the various societies throughout the country, one after another, have called it up for discussion. The Clinical Society has thought this an apportune time for her members to be heard, and that in some form the disease, so familiar to every practitioner, though in many of its aspects still shrouded in mystery, should be brought to their attention, in order that those who feel disposed may express their views. After the experience of last year, during which 671 persons died of pneumonia in this city, it has seemed all the more needful that the disease and its results should be again examined; and if in the review we shall find nothing new, we shall at least be strengthened in the belief that we are doing the very best that can be done. Dr. Daniel Drake, in his "Diseases of the Interior Valley of North America," says in the edition of 1854: "As pleuro-pneumonia may occur in every part of our valley from the latitude of 48° down to 24°, as it is often engrafted on our typhus fever, and quite as often complicated with a malarial diathesis, it follows that we should regard it as one of our most momentous diseases." That it is still a most momentous disease we need go no further for evidence than our own good city of Baltimore. If we review the past ten years, from January, 1879, to January, 1889, we find that 5,016 of our population have died from pneumonia, an average of a little more than 500 a year; during that period there were only six weeks in which no deaths were reported, namely, August, 1879, 1880, 1881; September, 1881, and July, 1887, 1888. The greatest number of deaths in any one month was 119, in March, 1888, average thermometer, 36°; the smallest, 9, in August, 1879, average thermometer, 76°, and August, 1883, average thermometer, 73°. The death-rate last year (1888) was nearly 100 greater than in any year for the past ten, and nearly 200 greater than the year preceding.

As the whole field cannot be covered, we desire to note but two portions of it, as those about which the chief interest centres at the present day, namely, its etiology and treatment. I think we may agree with Dr. Sternberg, that "acute pneumonia is now generally regarded, by the leading clinical authorities and pathologists in this country and in Europe, as a specific infectious disease." We may also, I think, agree with Professor Flint, that "each of these names (croupous pneumonia of the German writers, and fibrinous pneumonia of the French writers) is incorrect, and they all imply that the disease is a purely local inflammation, whereas there are sufficient grounds for regarding it as an essential fever. A more appropriate name is, therefore, Pneumonic Fever." We find, then, the pneumonitis of our fathers no longer a simple inflammation of the lungs, but an essential fever, infectious in its nature.

The causative agent expending its energies upon the lungs, as that of typhoid fever upon Peyer's patches, or that of malarial fever upon the red blood-corpuscles, seems all the more certain if we note the experiments upon dogs, in which the supposed agent injected beneath the skin in moderate doses failed to give any result, but intrathoracic infection always caused a frank, fibrinous pneumonia which was rarely fatal.

If the lessons of the present day teach us anything in regard to pneumonia, it is that we must look upon it as an essential, infectious fever. In looking for the cause of this fever, one does not search far until he meets with those who tell us that it is a germ, or at least that in every case certain species are always present in the diseased tissue of the lungs. The field, in so far as pneumonia is concerned, has been well studied; Friedländer, Talamon, Sée, Klein, Sternberg, and a host of others, have, after diligent search, placed in our hands to-day a something—the micrococcus Pasteuri—which, in the words of Dr. Sternberg in summing up the results of experiments, "in very susceptible animals (mouse, rabbit) invades the blood and quickly causes death by septicæmia; when injected through the thoracic walls in less susceptible animals (dog, sheep), or in an attenuated form in the rabbit, gives rise to the local lesions which characterize fibrinous pneumonia." It is needless at this time for us to consider this organism or theorize as to how it acts in producing pneumonic fever; doubtless you have all read the able discussion of it in the published paper of Dr. Sternberg, read before the Medical Society of the State of New York on the 6th of February of the present year.

If it shall be shown at some future day that the micrococcus Pasteuri is the cause of the fever, still other causes, or, more correctly speaking, other influences, must be brought to bear upon the individual before pneumonic fever will show itself. These latter, from the practitioner's point of view, require more care and attention, that the direct cause, if any such, be yet found.

We note but two of the indirect causes, if the term is allowed, as those most worthy of attention. It is everywhere recognized that the disease is most prevalent in the winter and spring months; the past ten years' experience here amply confirms the fact that pneumonic fever is then most active. That the disease is always present with us is shown from the fact that in the decade noted, only six weeks elapsed in which no deaths occurred, though doubtless cases existed even then. With striking uniformity the largest death-rate in each year was from November to May. These are our coldest months; but cold itself is not causative, for we do not find a very low temperature necessarily causing an increased death-rate; thus in January, February, March, 1888, with a temperature respectively of 29°, 35°, and 36°, the death-rate was 87, 100, and 119; while in the same months in 1881, with a corresponding temperature of 28°, 34°, and 42°, the death-rate was 73, 42, and 35. Dr. Thomas Darling, in his article on the etiology of pneumonia, shows in striking contrast the outbreaks of pneumonic fever among the workmen on the Croton Aqueduct—the epidemic as it showed itself among those under the most wretched hygienic surroundings, as in Shaft 23, and those more abundantly supplied with fresh air and better hygienic surroundings, as in Shafts 24 and 20. The Italians fared the best of them, he says. "The shanties for the Italians were not as well built as for other workmen, and to this I attribute partly the good results obtained. It was possible to see the daylight from the inside in any portion of the building, so that there was no lack of fresh air." In speaking of the epidemic in Shaft 23, he says: "This epidemic occurred in one room of a large shanty in which eighty men slept, forty during the day and forty during the night. There were but two windows, and these were never open. The odor was that of a menagerie. On the tenth day I had the room emptied, the sides and ceiling whitewashed, the bedclothes washed, and mattresses taken out into the sunlight and as much as possible washed, the windows opened, and the floor sprinkled with chloride of lime. Then the epidemic as such ceased abruptly." Thus it is more than probable that the causative agent is more active in the months noted, not so much on account of the low temperature, as that during the colder months we get less fresh air, keep our houses more or less poorly ventilated, and in our endeavor to shut out the cold we shut in these causes which tend to impair our vital resistance. This brings us to the second influence at work in causing pneumonic fever, namely, anything which impairs the vital resistance of the individual will make him a fitting subject; thus alcoholic excesses, prolonged exposure to cold—especially if combined, as it so often is, with insufficient nourishment—living in close, ill-ventilated dwellings, etc., are known to be the forerunners in very many cases of pneumonic fever.

[1] Read before the Clinical Society of Maryland, April 19, 1889.

We agree with Dr. Sternberg, in part at least, when he says: "The constant presence of this micrococcus in the buccal secretions of healthy persons indicates that some other factor is required for the development of an attack of pneumonia; and it seems probable that this other factor acts by reducing the vital resisting power of the pulmonary tissues, and thus making them vulnerable to the attacks of the microbes. The germ being always present, auto-infection is liable to occur when, from alcoholism, sewer-gas poisoning, crowd poisoning, or any other depressing agency, the vitality of the tissues is reduced below the resisting point."

It would seem, then, as though pneumonic fever were caused by a specific organism, the micrococcus Pasteuri; that it is most frequent in the winter and spring months, because then we surround our bodies with those causes which tend most to impair our vital resistance, and when that reaches a sufficiently low point, the active causative agent invades the lungs and sets in motion the series of phenomena we call pneumonic fever.

In considering the treatment of pneumonic fever, in its first stage, we are at once confronted with the question, "Shall we bleed our patients?" It is now admitted by all that blood-letting is only to be resorted to, if at all, at the outset of the disease, and after that time it is worse than useless. Flint has considered it very advantageous, and lays down this rule for its use: "High fever, the pulse more or less resisting compression; or, in other words, arterial tension and a robust constitution." In the discussion which followed a paper upon the subject of blood-letting, at the last meeting of the State Faculty, Drs. Williams and Chew related cases showing the marked good results which followed the prompt and judicious use of this measure. A careful study of the experiences of those most qualified to judge will show that the profession is looking upon blood-letting with more favor each year, and is disposed to assign to it a high place for good, if properly used; and in few diseases are its good effects more brilliant than in that now under consideration. Its usefulness is narrowly limited, and like all our powerful agencies it must be used with the discretion such always demand. As Professor Chew remarks regarding it: "We are now returning to the rational system of practice."

Upon the full establishment of the disease and the onset of the fever, a second question presses for an answer: "Shall the elevation of temperature be controlled—when and how?" This opens up such a broad field, and one so filled with combatants—it opens up that vast subject the treatment of fever, which in itself would demand a whole evening to give even an outline view—that we may be pardoned if we but glance at the question. We endorse the opinions of Dr. Whittaker, as expressed by him when discussing the subject at the meeting of the American Medical Association, 1888: "The bacteria," he says, "are sensitive to heat; 170° F. attenuates the bacteria of Fränkel in from twenty-four to forty-eight hours." This corresponds pretty well with the clinical history of a case of pneumonia. The fever may be the very agent destroying the disease. It has been observed that those were the most favorable cases in which the temperature was most pronounced. Danger is not on the part of the fever, but on the part of the heart, and the question is whether it is not the best plan of treatment to sustain the heart—let the fever alone, be content with small doses of antipyrine or antifebrin to do away with any evil effects of high temperature." Dr. Shattuck, at the same time, said: "During the past the influence of temperature in pneumonia has been overrated." He has discarded the systematic use of antipyretics in this disease. This, then, if an essential fever, should be treated as such, in so far at least as the elevated temperature is concerned; and so long as it does not exceed 103° F. no harm is being done, and, as a rule, antipyretics should be withheld. Opium to relieve pain and secure rest; counter-irritation of a mild kind; possibly the careful use of tartar emetic; the tonic effects of quinia, etc., are points in the treatment so familiar as hardly to call for mention.

In the second stage our chief concern is in regard to the heart, and we will continually seek from the pulse information as to whether or not our patient shall be overcome by the exhaustion incident to the disease. As has been said, "resolution will be sure to begin and continue, if the life of the patient be sufficiently prolonged."

If there is one danger more than another that is apt to beset our path, here it is—that in our anxiety to keep down the temperature we give it undue attention, and the first, often faint, indications of heart failure escape us. We should not wait until the signs of the oncoming asthenia are well marked, but at the very first indication of heart failure we should apply our remedies. We need to bear constantly in mind that "danger is not on the part of the fever, but on the part of the heart."

It is also needful that we lay more and more emphasis on the value of fresh air and the thorough ventilation of the sick-room. The difficulties here are great, as we all know. It is hard to make our patients fully alive to the importance of fresh air in such a disease; and do we not have ourselves to blame at times in that, while we are concerned with the increased temperature and asthenia, we fail to call to our efficient aid that too common ally, fresh air.

Dr. Gouverneur Smith, of New York, in a discussion of this subject, puts all else in the background and brings "fresh air" to the front. We should ring the words into our patients' ears with no uncertain sound, so that they may realize that it is as much an element in the treatment as any of our therapeutical means. The writer above quoted says: "It is more than ordinary ventilation that is required in such cases; what is needed is a persistent, systematic attention to a constant change of air in the apartment of the sick by night and by day, each hour, each minute, each second. . . . Attention in the line above indicated should be excessive." The less breathing-space the patient has, the more particular should we be that the portion of the lung that is active should receive a full, free amount of air loaded to its utmost with oxygen. The sick-room should thus not only be well ventilated, but people, gas-lights, and every possible source of vitiation of the atmosphere should be most carefully excluded. At the present day we believe that a patient well nourished is in a better condition to combat disease than one poorly nourished, and thus we find it needful to keep the nutrition of the tissues in the greatest state of perfection. Thus we believe that when we have, in suitable cases, rarely to be found, drawn blood by cups or the lancet; have used our antipyretics only when the evil effects of a high temperature show themselves; have brought our remedies actively to bear upon the heart when the first faint symptoms of failure in the power of that organ are observed, remembering that "danger is on the part of the heart;" seen to it that "fresh air," in the fullest meaning of the term, is supplied without a moment's intermission; the nutrition at all times well maintained, and our drug stores called upon to furnish drugs to meet the indications of pain, etc., as they arise, we have done the very best for our patients that we can with our present knowledge.

Two points call for mention in conclusion. One is: Have we made advances in our treatment? It does not become us to enter a field at present occupied by two such able men as Dr. Hartshorne and Dr. Osler; the statements of the two are familiar to all of you. We believe with Dr. Osler that "Dr. Hartshorne's statement, that the mortality of pneumonia to-day is, under similar circumstances, more than twice as great as it was forty years ago, is not borne out." A second point is: How shall we account for the seeming epidemic influence of the disease, such as was witnessed here last year? It is due, among other causes, to the fact, possibly, that we have an accumulation of material suitable for the activity of the microbe, as we find in the case of the poison of small-pox, which, in spite of our precautions, will now and then find sufficient unprotected material upon which it can feed and produce an epidemic of the disease.

ANOTHER VIEW OF MATERNAL IMPRESSIONS.

By R. OSGOOD MASON, M.D.,
NEW YORK.

In the *Medical Age*, March 11, 1889, appears a communication upon the above subject, which, notwithstanding some crudities and a great deal of dogmatism, contains the gist of the argument against maternal impressions so sharply put as to call for a moment's consideration.

The writer characterizes the supposition that birthmarks may be influenced by maternal impressions as "the old woman's idea," and, in opposition to those who have written in favor of such a supposition, he feels "forced, in the vindication of science," to break his silence.

The following unqualified assertions are then made: "It is as utterly impossible for a mother to mark her child *in utero* as it is for a fowl to mark the young that is in the eggs under her." "When we advocate such an unscientific reasoning as the possibility of a mother transmitting nervous impressions to her young *in utero*, we show to the world that we believe in ghosts, and not in the progressive science of our age." "Stop, gentlemen, and think for a moment that there is not the least nerve-communication between the mother and her child."

The argument, fairly presented, is that, since no nerve-filaments have been demonstrated in the cord or placenta directly connecting mother and child, therefore no nervous connection exists, and no nervous influence or effect can be transferred from one to the other, any more than from the hen to the eggs in the nest beneath her.

The care for the honor of science which animates the bosom of this author is doubtless shared in some degree by others who have contributed in various ways to the literature of this subject, possibly even by some who favor the "unscientific" view which he deprecates.

As an example of those who may fairly be supposed to have had the honor of science at heart, and yet have ventured to entertain views upon this subject at variance with those of our author, I would mention the distinguished professor of physiology, the late honored president of the College of Physicians and Surgeons of New York, Dr. John C. Dalton. In the chapter on the placenta, in his treatise on "Human Physiology," he says: "There is now little room to doubt that various deformities and deficiencies of the fœtus, conformably to popular belief, do really originate, in certain cases, from nervous impressions, such as fear, disgust, or anger, experienced by the mother." From the well-known effect of various emotions, or of nervous shock upon the circulation, as shown in the face, the brain, the uterus, and, as might be added, upon the milk and other secretions, as well us upon the functions of excretion and evacuation, Dr. Dalton argues that as the fœtal circulation is dependent to a great degree upon the maternal circulation, and as the nutrition of the fœtus is provided for wholly by the placenta, nervous impressions or nervous shocks received by the mother may be reasonably supposed to produce the effects referred to through the placental system of circulation and nutrition. This is a method of conveying the effect of nervous impression to the fœtus not possible in the case of the hen and the egg in the nest.

No intelligent observer supposes that deficiencies, deformities, or other birthmarks are produced in any other way than through the medium of the circulation. Nor do they see any "witch footprints" nor any other miraculous effects in connection with this process, but only the operation of natural law.

However, since Dr. Dalton recorded the views above quoted, the rôle in physiological action played by nervous impressions has been found to be much extended; many new facts have been observed, and many alleged facts formerly rejected or looked upon with suspicion are now either fully received or at least respectfully considered. This same nervous influence which produces the blush or the pallor of the face, the cerebral congestion, the sudden check of menstrual flow, or change in the nutrition of the fœtus, is now believed by many reputable and scientific men to be able also, in certain exceptional cases and under certain peculiar conditions, to produce definite limited local effects, such as marks and discolorations, upon particular portions of the body, known as stigmata, the oozing of blood from the unwounded skin, the removal of local paralyses, and curing of other functional disorders. The investigations and experiments of Liébault, Bernheim, Forel, and others have established a series of remarkable facts bearing upon this subject; not that many of these facts were new, but they had simply shared the fate of new facts generally in every age. Sometimes it has been religion, sometimes philosophy, and sometimes science which has been their conservative opponent; but whichever it may at any particular time have been, if the new facts did not tally with the received theories of that time —so much the worse for the facts.

In regard to the series of facts above referred to, a theory has been devised which science can accept, and upon the respectability of the theory they are accredited. By these facts it is established that mental impressions received from some other person, or from some strongly dominant idea, are capable of so affecting the vaso-motor system as to produce the remarkable effects of vesication, stigmatism, and bloody exudations—effects, which, a few years ago, were relegated by science to believers in ghosts and seers of "witch footprints," but which are now received and respected as facts. As in these cases the effect is produced upon the person who receives the impressions, objection might still be raised to applying the same reasoning to effects produced by maternal impressions upon the fœtus *in utero*. The following question might then properly be considered, namely, Can nervous or any personal or vital influence extend beyond the limit of actual nerve-supply?

The alleged facts bearing upon this subject occupy the same relation to science now that the received facts in relation to the effect of mental impressions or powerful emotions upon the vaso-motor system did ten years ago; they are, for the most part, relegated to the believers in ghosts and seers of "witch footprints." Nevertheless, numerous and well-authenticated facts bearing upon this subject exist, and while this is not the place to recount them, the more special questions to which they relate may be briefly stated. The following may serve as examples:

Is it a fact that, independent of obvious conditions, such as cleanliness, health, beauty, intelligence, or the influence of sex, many persons of sensitive nervous organization coming in contact with, or even into the presence of, some persons, entire strangers, are agreeably and pleasantly affected, while the presence of others is disagreeable or even painful?

Is it true that such close sympathy or relationship may exist between two persons that, being separated from each other by such a distance as to render perception by ordinary means impossible, still some violent mental emotion, or sense of danger, or injury received by one is perceived by the other at the same moment?

Is it true that this same relationship may be so powerful that at the moment of the death of one of the related persons such an effect is produced upon the other that a visual perception of the dying one is distinctly received?

If facts exist bearing affirmatively upon these questions, and consequently upon the theory that impressions may be received from sources entirely beyond the limit of nerve-supply, it bears an important relation to the subject of the effect of maternal impressions upon the fœtus; and, taken in connection with the established fact of the effect produced by mental impressions upon the vaso-motor system, furnishes reasonable ground for an argument in favor of the theory that birthmarks may be caused by maternal impressions.

No conclusive argument for or against the theory at present exists; but the great number of birthmarks which are referred to maternal impressions, and the very remarkable and pertinent circumstances attending many of them,

point strongly to some relation between them other than simple coincidence.

So it seems neither modest, useful, nor scientific to simply assert that a relation of cause and effect does or does not exist; nor for those who believe, on the one hand, or those who do not believe, on the other hand, to bandy epithets. The question undoubtedly possesses scientific interest; therefore let the well-authenticated, pertinent facts be faithfully reported, and then let the fair deduction which "the progressive science of our age" will surely make be patiently awaited.

SANITARY ADVANTAGES OF SALT LAKE CITY.

By H. D. NILES, M.D.,

SALT LAKE CITY, U. T.

The sanitary advantages of Salt Lake City, to which the writer has ventured to call the attention of the profession, are as follows:

1. A distinctly local climate, apparently possessing to a marked degree the popular requirements of a high-altitude resort.

2. Unexcelled salt-water bathing, the peculiarities of which may indicate unusual remedial virtues.

3. Hot, warm, and cold sulphur springs, of alleged marvellous curative properties.

Such a combination of natural remedial agents in one city is unique, and it is hoped that the following brief description of them may not be devoid of interest, and perhaps may lead to their further investigation by the medical profession which may establish their true value. Until quite recently, owing to circumstances which need not be explained, the investigations of the health-seeker, as well as those of other visitors, have received but little encouragement from the residents of this city. They have rather repelled anything that to them looked like an interference with their exclusiveness. Fortunately these conditions no longer exist.

The writer of the present article will attempt, briefly and fairly, to present some of the statistical data and theoretical grounds for believing that Salt Lake City is justly entitled to a high rank as a sanatorium, leaving for a future article the confirmatory evidence of clinical observation, and the less valuable testimony of the health-seeker himself.

A high-altitude resort should possess the greatest possible dryness and equability, an elevation of from 3,500 to 8,000 feet, the greatest number of sunshiny days during the year, in which the invalid may enjoy out-door life, a comparative freedom from wind- and sand-storms, a proper temperature, and certain other qualifications not of a purely climatological character. An attempt has been made to name the climatic factors in the order of their comparative importance.

The tables A, B, and C are compiled from the reports of the United States Signal Service and embrace a period of observations from 1874 to 1884, inclusive. From 1863 to 1874 observations were taken at Fort Douglass.

Dryness.—First in importance is dryness of the air as indicated inversely by the relative humidity. Salt Lake City's air averages 44.6 per cent. relative humidity, and consequently lacks 55.4 per cent. of saturation, showing a greater absorption capacity than any place in the United States where observations have been taken.

Recent investigations have tended to strengthen the prevailing opinion of the great value of the absorptive and aseptic qualities peculiar to dry air in the treatment of pulmonary diseases. It is a well-known fact that warmth and moisture favor decomposition and the generation of micro-organisms, and lessen the vapor transpiration. Exactly the opposite may be said of cold, dry air. It destroys or retards germ-life, in and out of the lungs, and increases the amount of moisture exhaled. The moisture thus exhaled may also serve as a vehicle for the removal of effete matter, wasted tissue, and germs of disease.

Dr. Denison, whose original researches have thrown so much light upon our knowledge of high-altitude climates, suggests a very ingenious method for calculating the excess of moisture exhaled in a cool, dry air over that in a warm, moist air. In this calculation Glaisher's estimate of the weight of vapor in grains, in air of a given temperature, is adopted; and it is assumed that the dew-point in exhaled air is 94° F., and that it is saturated. Apply this method of calculation to the air of Salt Lake City, Denver, and Los Angeles in the case of a good-sized man, who, we will suppose, breathes twenty times a minute and thirty inches per breath on an average, and note the great excess of moisture exhaled daily in the two former places with a dry, cool air, over the latter with a warm, moist air.

	Salt Lake City.	Denver.	Los Angeles.
Average temperature	49.5°	49.4°	60.4°
Weight of vapor at saturation for given temperature in grains (Glaisher)	4.0	4.0	6.94
Average relative humidity	0.44	0.512	0.682
Cubic feet of air breathed in twenty-four hours	500	500	500
Weight of vapor inhaled (grains)	880	1,024	2,367
Weight of vapor exhaled, dew-point 94°, saturation being 16.69 grains per cubic foot (grains)	8,345	8,345	8,345
Vapor exhaled more than inhaled	7,465	7,321	5,978

Excess of Salt Lake City over Los Angeles in vapor exhaled, 3 ozs. 47 grs.
" " Denver " " " " " 2 " 383 "
" " Salt Lake City " Denver " " " 144 "

But if allowance be made for one-fifth greater amount of air breathed (the air being one-fifth rarefied), Salt Lake's excess in transpiration over Los Angeles would reach over four ounces daily.

In noting the remarkable aseptic and absorptive properties of the air, the question is suggested, May not these qualities have a favorable influence on our surgery?

From 1863 until the establishment of a station at this point observations were taken at Fort Douglass, in the suburbs of this city, and five hundred feet higher than the present station. During this time the average relative humidity was 43.5 per cent. This fact would seem to indicate that on the mountain-sides, near the city, the air might be even dryer than in town.

Atmospheric pressure.—In regard to altitude, Salt Lake possesses the advantage of being located immediately at the foot of a range of mountains, enabling the health-seeker to select any altitude of from four thousand to eight thousand feet above the sea level, as may be best suited to his particular case. Or he may vary it as the progress of his case demands, and still be near enough to the city and lake to enjoy all of their advantages. In those rare cases where a still higher altitude is advisable there are desirable places, but at a greater distance from the city.

Number of clear and fair days.—In Table A it will be noticed that Salt Lake has an average of two hundred and seventy-seven clear or fair days in the year. This is a large proportion, but not equal to some other places of about the same or higher altitude. It is believed, however, that after making a fair allowance for the number of so-called clear or fair days, when sand- and wind-storms prevent the enjoyment of out-door life at these places, the balance would be in favor of this city. It should be explained that of the remaining eighty-eight days classed as cloudy there are very few in which the sun does not shine a part of the day. Old residents estimate that on an average there are not five days in the year in which the sun does not shine.

Wind.—Tables A and C give an idea of the relatively small number of miles travelled by the wind during the year at this place, and the average velocity and direction of the winds for each month. It should be added, that there is a comparative freedom from high winds, and an

TABLE A.—*Salt Lake City. Period of Observations Extending from* 1874 *to* 1884 *Inclusive. Elevation about* 4,300 *Feet Above Sea-level.*

Period.	Mean temperature at the hours of			Average mean temperature.	Average maximum temperature.	Average minimum temperature.	Relative humidity.	Average number of clear and fair days.	Mean daily range.	Prevailing winds.	Average hourly velocity.	Rainfall.
	7 A.M.	3 P.M.	11 P.M.									
	Deg. F.	Deg. F.	Deg. F.	Deg. F.	Deg. F.	Deg. F.	Per cent.		Deg. F.	Direction.	Miles.	Inches.
January	25.0	33.2	27.9	28.7	48.8	−6.1	59.4	19.8	14.2	S.E.	4 0	1.33
February	28.4	38.2	32.2	33.0	50.9	−3.0	57.2	18.3	15.8	S.E.	4.4	1.37
March	36.1	47.9	41.1	41.7	63.9	21.6	49.1	20.5	17 4	S.E.	5.9	2.01
April	42.0	55.6	48.5	48.7	71.7	29.7	46.6	20.2	18.9	N.W.	6.4	2.44
May	49.9	64.9	56.9	57.2	83.3	35.6	40.6	23.7	21.1	N.W.	6.5	2.14
June	59.4	76.8	66.9	67.7	94.2	46.9	32.6	26.9	23.6	N.W.	6.2	0.67
July	66.5	84.8	74.6	75.2	95.0	51.6	30.1	28.3	23.6	N.W.	5.7	0.59
August	65.9	83.8	74.1	74.1	95.0	49.3	31.5	28.1	21.4	S.E.	5.7	0.84
September	55.9	73.5	63.1	64.0	87 5	53.1	32.8	27.3	21.0	N.W.	5.5	0.85
October	46.0	59.2	50.3	51.1	75.8	28.1	43.0	24.4	17.7	N.W.	4.9	1.81
November	33.9	44.7	37.6	39.0	61.4	18.8	52.1	21.5	16.9	N.W.	3.9	1.47
December	29.2	37.4	31.7	32.6	51.6	9.6	60.6	18.2	13.1	N.W.	3.9	1.48
Winter	....	....	....	31.4	50.4	0.2	59.0	56.3	14.3	S.E.	....	4.18
Spring	....	....	....	42.5	72.9	28.9	45.4	64.4	19.1	N.W.	....	6.59
Summer	....	....	....	71.3	94.7	49.2	31.4	83.3	22.8	N.W.	....	2.04
Autumn	....	....	....	51.3	74.9	30.0	42.9	73.2	18.5	N.W.	....	4.13
Year	....	....	....	49.5	....	....	44.6	277.2	18.6	N.W.	....	16.94

TABLE B.—*Period of Observations Extending from* 1879 *to* 1884, *Inclusive.*

Location.	Elevation.	Relative humidity.	Average mean daily range.	Clear and fair days.
		Per cent.		
Salt Lake	4,348	44.0	18.6	277
Denver	5,294	51.2	24.2	309
Colorado Springs *	6,080	55.5	28.4	316
El Paso	3,764	48.9	30.1	332
Santa Fé	6,992	44.7	26.0†	318
Los Angeles	371	68.2	23.1	313

* There being no U. S. Station, observations were obtained from other reliable sources.
† Twelve years' average.

TABLE C.—*Period of Observations Extending from April,* 1878, *to March,* 1879.

Location.	Miles wind travelled.	Location.	Miles wind travelled.
Cape May	134,455	Colorado Springs	70,912
Milwaukee	110,724	Jacksonville	74,192
Boston	85,704	San Diego	55,062
St. Paul	76,096	Salt Lake City	44,468 *

* Average from 1880 to 1886, inclusive.

entire absence of cyclones and hurricanes. High winds, like variability, have hitherto been regarded as necessary evils of high and very dry places; in other words, that places sufficiently sheltered by mountains to be protected by the wind, could not be very dry. The absence of these objectionable features in Salt Lake is, therefore, worthy of especial mention.

Temperature.—With an annual average mean of 49.5°, and an annual daily range of 18.6°, this city has an exceptionally cool, equable climate. Possessing the advantages of seasonal changes in the temperature, these changes are so gradual and the air so dry that neither the cold of winter nor the heat of summer produces the unpleasant effects that they otherwise might. On the sides of the snow-capped mountains, in close and convenient proximity to the city, are places where the invalid may find both altitude and coolness during the months of July and August, should an average temperature of 74° be deemed too warm. Between 1874 and 1885 the average coldest winter day was but 6° below zero; and the average warmest day in summer but 95° above zero. Between 1863 and 1874 the average lowest temperature was 4° above zero. Dr. Hamilton compares the average annual range of this city with a few other prominent cities as follows (time 1863 to 1874):

Montreal	140°
New York City	114°
Denver	126°
St. Louis	133°
Chicago	132°
Salt Lake	93½°

A very rare, if not unique, feature in the climate of Salt Lake is its remarkable equability, as shown by the mean daily range of 18.6°. Equability has been regarded as belonging exclusively to low, moist localities, and "variability as a distinguishing attribute of all high and very dry places." Mr. Brice says: "It becomes a matter for careful study to determine wherein lies the happy mean between dry climates with great daily range, and moist climates with small daily range of temperature." Other authorities are equally positive in the conclusion that equability is incompatible with great dryness. The reply to the climato-therapeutist who has demanded dryness and equability combined has been, you ask that which is impossible.

In the possession of this combination it would appear that Salt Lake City is able to offer that which is likely to prove equally satisfactory to the climato-therapeutist and the health-seeker who has been driven from other high resorts on account of their variability.

The mountain protection on the east, and the moderating influence of two thousand five hundred square miles of salt water on the west, undoubtedly have much to do in producing this distinctly local climate.

Diathermancy and Ozone.—It is generally believed that diathermancy of the air increases with the altitude, and that ozone is most abundant in sea-air, and the air of mountainous regions. The writer knows of no local conditions that would lead one to conclude that the atmosphere of Salt Lake was an exception to the rule in this respect.

To sum up, then, I believe that it is fair to conclude that in points of dryness of the air, equability of temperature, comparative freedom from wind and sand storms, and elevation (four thousand three hundred feet, and higher places in convenient proximity) Salt Lake City stands without a parallel. No other city has a more favorable temperature or a greater number of bright, beautiful days in which a patient may safely and pleasantly enjoy out-door life. These conclusions being true, Salt Lake City possesses the nearest approach to an ideal high-altitude climate at present available.

Other qualifications not of purely climatological character.—The location of the city and its soil are favorable for perfect drainage. The city drinking-water is from the mountains, and of the limestone variety. A recent analysis shows a minimum amount of organic matter. Artesian water is used to some extent, and can be procured at a depth of from ninety to one hundred feet.

Concerning the diet, it should be said that, in addition to all the articles of food procurable in any Eastern city, there is an abundance of wild game and fish (brook trout and others). As an evidence of the excellence of the fruit and vegetables, it may be said they bring a higher price in the San Francisco market than the California products. A not unimportant attribute of this health resort

is the fact that with the opportunities afforded by the great number of beautiful days are the inducements offered by Salt Lake City to live as much as possible in the open air. With its grand and picturesque scenery, its fine drives, shaded avenues, beautiful lawns, luxuriant foliage, etc., no city possesses a greater number and variety of attractions to invite the health-seeker into the open air.

Bathing in the Great Salt Lake.—Analysis of the water:

	Grains.
Sodium chloridi	11.735
Calcium carbonatis	.016
Calcium sulphatis	.073
Magnesia sulphatis	1.123
Magnesia chloridi	.843
Water	86.210

Percentage of solids 13.790, against about two per cent. in ordinary sea-water. The specific gravity is 1.110. The water is entirely free from odor. It is possible that the quality and large proportion of saline matter may have a sanatory significance. The only natural body of water having as high a specific gravity is the Dead Sea.

The calmness of the surface, the buoyancy of the water, and the fine beach all combine to render bathing and swimming in the lake easy and pleasant exercise for the average invalid, and free from many of the difficulties and dangers attending ordinary surf-bathing. No living thing inhabits the waters of the lake, an advantage that will be appreciated by the sensitive and timid.

Within the past year and a half elegant, spacious buildings have been erected at the different resorts, and every effort is being made to comfortably accommodate the rapidly increasing number of bathers; so that, with the exception of the peculiarities mentioned, this bathing resort does not materially differ from that of any first-class ocean resort.

The Sulphur Springs.—It is not generally known that thermal springs exist in the vicinity of Salt Lake, owing to the fact that they never have been advertised. However, a number of very excellent sulphur springs are found within the limits of the city. These vary in temperature, from extreme cold to 130° F. They all contain a small quantity of free carbonic acid, and a large amount of sulphuretted hydrogen gas. An analysis shows each pint of the water to contain solid constituents as follows:

	Grains.
Sodium chloridi	60.40
Potassium sulphatis	1.41
Magnesia sulphatis	3.10
Sodium sulphatis	18.73
Sodium carbonatis	1.94
Silica boratis	.18
Potassium chloridi	1.12
Magnesia chloridi	6.28
Calcium chloridi	1.02
Calcium carbonatis	3.13
Magnesia carbonatis	.77
Alumina boratis	15.50

It is hoped that the above analysis may furnish some light as to what may be expected of these springs, therapeutically. The bathing accommodations and means of transit to and from the springs are not what they should be, nor what springs of such apparent excellence deserve. Notwithstanding these inconveniences, these springs are largely patronized, and marvellous stories are told of their efficacy in rheumatic, syphilitic, and skin diseases.

Those who would try this wonderful and unique trio of "Nature's own remedies," should know, however, that Salt Lake City, as a health-resort, is not free from objections. With a population of 35,000 people this city has no underground system of sewerage.

The streets are not paved and the city is poorly lighted. The supply of water under the present system is inadequate. There are no regular resort hotels. Where there need be neither dust nor mud, this city is not entirely free from either. The sanitary condition of the city is not what it should be. Fortunately, all of these are remediable faults. Indeed arrangements have already been perfected for a more abundant supply of water and a complete sewerage system; and it may safely be predicted that where Nature has been so lavish in bestowing her favors, man will not long neglect the little left for him to do, and in the near future the health-seeker will find in Salt Lake not only everything that contributes to the health and comfort of the invalid, but a most beautiful city in which to live.

Clinical Department.

UNITY OR DUALITY OF SYPHILIS.

By GEORGE J. MONROE, M.D.,
LOUISVILLE, KY.

ARE syphilis and chancroid, or hard and soft chancre, one and the same disease? All authors and teachers, at the present time, say they are not. All experimentation and symptoms nearly show their duality.

Chancroid is a soft sore, or ulcer, coming on within forty-eight hours after exposure, capable of being produced on the patient or others by inoculation, accompanied by suppurating buboes, and followed by no constitutional symptoms.

Chancre, on the other hand, rarely manifests itself under twenty days after the impure intercourse. The sore is indurated and hard, non-suppurating buboes, not inoculable on patient or anyone having syphilis, followed by secondary constitutional symptoms, etc. These seem to prove that they are two separate and distinct diseases. I wish to report a case that seems almost positively to prove the unity of the diseases, or at least that secondary symptoms may follow chancroid.

A young man came to me some time ago, about three days after intercourse, with a well-developed case of chancroid. The sore was eaten into the parts, with excavated edges, but there was no hardness or induration. I inoculated his leg and a well-marked chancroid resulted. In a short time a bubo developed and went on to suppuration. Every indication pointed to chancroid, and chancroid only, and so I told my patient. The sore healed kindly under the use of dry calomel. What was my surprise to find, in about seven weeks, a case of secondary syphilis. The syphilides were present. Sore throat, etc. The young man positively asserted, and I believe truthfully, that he never had but this one intercourse in his life. The mercurial treatment soon controlled the symptoms.

At his special request I visited the girl with whom he had had the intercourse. I examined her thoroughly. She evidently, at the time of intercourse, had a chancroid, but at this time it was entirely healed. There was not the slightest indication of any secondary symptoms, which proved to my mind that she had no syphilis. She had taken no medicine for syphilis, so the symptoms could not have been masked. She stated that she had had no intercourse with anyone for several days prior to this time. This young man had the connection with her on a Sunday night. On the Thursday night before she had intercourse with a drummer, a stranger to her. Is it possible that this drummer could have deposited syphilitic virus in her vagina at that time, which remained inert until the Sunday night when the young man had intercourse with her? If so, why was the girl not affected, as she no doubt had a chancroidal sore at the time? I have watched her closely, and no syphilitic symptoms have shown themselves, and it is now over three months since the occurrence. I called it a missed case. Still, if my patient had chancre, why was it not indurated? Why was it inoculable? Why did the initial sore develop so soon? If it was simply chancroid, why the secondary symptoms? Why was it controlled by specific treatment?

I do not fully understand the case. This I do believe, however, he had chancroid, and he also had constitutional syphilis.

ENORMOUS HYDATID CYST OF RIGHT KIDNEY—AUTOPSY.

By A. L. STAVELY, M.D.,
READING, PA.

The kidney is so seldom chosen as the seat of this very rare growth that, unless the urine betrays the secret of its existence, or rupture occur, it is very apt to be overlooked. Owing to the obscurity generally connected with such cases, it is well to call the attention of the medical public to them when they occur. The case in question, George Starok, a Russian Pole, forty-three years of age, was admitted to the Reading Hospital on March 3, 1889, with a temperature of 101⅘° F.; pulse, 88; respiration, 24; suffering intense lancinating pain anteriorly, just below the thorax, and extending around to the back. The past history was very meagre, owing to inability to understand him. About two months before admission, he first became conscious of something wrong from severe pain that he experienced whenever he would attempt to work. The patient was quite well preserved, though his eyes were sunken and face indicative of suffering.

Inspection revealed a very marked prominence of the lower part of the thorax and the upper part of the abdomen, with labored inspirations, and pulsation below the ensiform cartilage. On palpation a large, firm mass could be felt, extending about four inches below the margin of the ribs. One of the hospital physicians thought that he could detect fluctuation, but the demonstration of it was so uncertain that no importance was attached to it.

Percussion gave the following results: Over the sternal region the line of dulness was seven inches, the lower limit being from two to three inches above the ensiform cartilage. The length in the right nipple line was ten inches, dulness beginning at the nipple. In the right mid-axillary region dulness extended seven inches, beginning at the eighth intercostal space. Posteriorly, on the right side, decided dulness began at tenth rib, the lower boundary being obscure. Dulness extended over to the left mid-axillary line, where it began at the seventh intercostal space and extended to the edge of the thorax. Auscultation demonstrated encroachment of the mass upon the right lung. The pain continued after admission, and had to be relieved by hypodermics of morphine and atropine. The stools, which, with one or two exceptions, were loose, varied from light to dark green in color, and were about normal as to frequency. His urine was slightly darker than normal, and contained no albumin nor anything else that could be of assistance in making a diagnosis. There was no jaundice nor anything but the stools which would indicate any hepatic disturbance. He was placed upon liquid diet, and owing to the uncertain diagnosis no especial medical treatment was adopted. The pulse varied from 72 to 100, the respirations from 19 to 30, the temperature averaging about 99° F. On April 11th he complained of excruciating pain, and frequent resort was made to the hypodermic syringe. On the morning of the 12th he went to the bath-room for a wash, and was there only a minute, when he came rushing out and, dropping on the floor by his bed, expired.

At the autopsy the following condition was found:

On opening the abdomen a large, tense, fibrous sac was seen, and, by manipulation, was found to have liquid contents. The liver was pushed upward and to the left, so far that the gall-bladder occupied a position on the left side corresponding to its normal position on the right. Outside of flattening, the organ was not otherwise affected. The heart was forced a little to the left. The vena cava was pushed anteriorly by the cyst, and was two to three inches away from its normal position.

The ascending and transverse colon was fastened by close, fibrous attachments to the wall of the cyst, so firmly that it was difficult to separate them. The diaphragm was so intimately united that it could not be dissected from the cyst, but had, in part, to be removed with it. On feeling for the right kidney, it was discovered that its position was occupied by this enormous body, and the kidney was not to be found. In trying to remove the cyst, the manipulator's finger forced its way through a weak spot, and over nine pints of a clear, odorless, serous-like fluid escaped, and floating in the fluid, was found a solitary daughter-cyst, about half an inch in diameter. After great difficulty the cyst was removed, and was found to contain a thick, white, membranous mass floating in some liquid. The membrane, or more properly, the cyst-wall, was distinctly laminated, and looked something like boiled albumin. One surface was slightly roughened, and had on it, here and there, aggregated nodular masses, which proved to be echinococci buds. The other surface of the cyst-wall was smoother and had on it thin layers of a jelly-like consistence, which were easily attached, and which seemed to be a more recent formation. Examination of the sac that contained the hydatid cyst, demonstrated the fact that it was nothing but a dilated kidney, the ureter of which had become entirely occluded, and the lateral halves of which were imbedded in the walls of the sac at about two inches distance from each other, and feeling like masses of muscular tissue. The walls were composed of bands of fibrous tissue running irregularly in every direction, being thinner in one place than another. The inside of the sac, or what presumably corresponds to the pelvis of the kidney, was smooth. Microscopic examination of the cystic fluid revealed a number of echinococci hooklets, and crystals of chloride of sodium were discovered on evaporation. The fluid was somewhat acid and gave a slight albuminous reaction. The left kidney was much enlarged, weighing 12⅜ ounces. There was no degeneration as yet, and the hypertrophy was due entirely to vicarious action. The spleen weighed 12½ ounces, was very brittle in consistence and deeply congested. The heart was somewhat dilated, and there was some fibrinous deposit about the mitral and aortic semilunar valves. No apparent lesion of any other organ was recognizable.

THERAPEUTIC VALUE OF PHENACETINE.

By THOMAS W. AYERS, M.D.,
JACKSONVILLE, ALA.

For the past few years I have been using antipyrin for its value as an antipyretic and an antineuralgic, but as in several instances in my practice untoward results have been produced, where cyanosis, vomiting, disturbed respiration and circulation have followed doses which, to other patients and in other circumstances, had been administered with impunity, and on account of the monopoly, and unreasonable price charged for it by the manufacturer, I was delighted when I saw the announcement that phenacetine, a new remedial agent which was superior to antipyrin in its therapeutic value as an antithermic and antineuralgic, without toxic phenomena, and which was being sold for a less price, had been placed before the profession.

After seeing the first few notices of phenacetine through the journals, I had my druggist make an order for it, and since then have prescribed it freely, and, as compared with antipyrin, I have been delighted with the results which I have obtained from its use.

As an antipyretic I have had nothing but the very best results from its use. The time at which the temperature commences to fall when phenacetine has been given in pyrexia is usually not more than thirty minutes, and the maximum lowering occurs in about three hours. The duration of the reduction is usually from four to six hours; but, of course, much depends upon the dose given and the disease being treated. Ten grains will be found to be usually sufficient to lower the high temperature by three degrees, after the lapse of from two to four hours. The transition of the high temperature to the lower, and *vice versa*, is a gradual one. After large doses, say fifteen to twenty grains, have been administered, profuse perspiration occurs, but no bad consequences supervene. Have

not had it produce a cutaneous rash like that produced by antipyrin and other antipyretics.

As an antineuralgic, there is no question but it is superior to antipyrin. It is much more energetic in its action than either antipyrin or antifibrin. The effect of the drug is manifest, as a rule, in thirty minutes after the administration of the first dose. If relief is not obtained in from thirty to sixty minutes, a second dose is given; but I have rarely had to give the second dose to relieve any painful affection. The results obtained in the treatment of neuralgias and migraine indicate that all paroxysmal pain is especially susceptible to treatment by this remedy. I have prescribed it, among other affections, for occipital neuralgia, hemicrania or vaso-motor cephalalgia, facial neuralgia, and dorso-intercostal neuralgia, and in no case has it failed to give marked relief, and the pain usually disappears in thirty to sixty minutes. I have noticed in several instances that its sedative action is accompanied by a decided hypnotic effect. I had a patient this week who suffered intense pain from dental neuralgia. I prescribed for her twenty grains of phenacetine. In forty minutes she was entirely relieved of pain, and slept soundly. The pain returned with great intensity in eight hours after the dose of phenacetine had been administered. Again gave her twenty grains of phenacetine. In thirty minutes she was perfectly easy, and soon slept soundly. In six or eight hours she had a return of the pain, which yielded as before to the effects of phenacetine. I also had a patient this week who suffered from excruciating, darting, lancinating pains along the distribution of the ophthalmic division of the trigeminus. He had taken antipyrin and morphine, with negative results. I prescribed for him twenty grains of phenacetine. In thirty minutes the effect of the drug was manifest. In one hour he was entirely easy, and the pain did not again return. I could cite other cases with results similar to the two given, but as I wish to make this article brief, I will desist, and simply state that in no instance have I been disappointed in this drug as an antineuralgic.

Dosage.—As an antipyretic, I think it should be given in eight to ten grain doses, to be repeated as often as is necessary to control the temperature. My observations show ten grains, to adults, repeated every six hours, to be a sufficient dose in febrile cases. For the relief of pain in neuralgia, etc., I find it necessary to give from fifteen to twenty grains to obtain relief from one dose. I have given as much as sixty grains in nine hours, and have had no evil results from its use.

SINGULAR CASE OF MULTIPLE LABOR AND ITS MANAGEMENT.

By R. RANDOLPH BALL, M.D.,
ASSISTANT SURGEON, U. S. ARMY.

Shortly after returning from a leave of absence, in January, 1889, I was requested by my friend Dr. G—— to see a singular case of labor he was then attending. The patient was a robust laboring woman, thirty-eight years of age, and had given birth to a healthy child on February 6, 1888, although the labor, I was told, had been a difficult one, requiring delivery by forceps. Dr. G—— had been called to attend this woman on the night of February 1, 1889, and, finding her in labor, had remained and delivered her of a full-term male child. On his arrival he found her walking about the room (between the pains). She was directed to go to bed, but before reaching it a heavy pain seized her, expelling the child while she was in the upright position. She was then placed in bed, the cord tied and cut, and the woman was made as comfortable as possible. After the expulsion of this child the womb quieted down, and there was not the slightest return of pain to indicate a desire to expel the placenta. At this time gentle traction was made on the cord, with no effect, and it was then noted that the abdomen was unusually large, and, on carrying the finger up the cord, some slight resistance was noted on deep pressure into the cavity of the womb. Seeing this condition of affairs, Dr. G—— suspected the existence of a second child; and, it being impossible to know positively whether there existed one placenta or two (which, of course, was a paramount question), he decided to postpone further action, simply ordering her a carbolized douche, and to be kept quietly in bed.

On February 2d, the next morning, he desired me to see the case with him. On passing the finger up the cord a peculiar resistance was felt, which seemed to me like the surface of a knee; the placenta was firmly attached; the abdomen, although large and resisting, was so covered with fat that I found it impossible to make out anything by palpation. No definite heart-sounds were discoverable through the stethoscope. Although the most definite diagnostic point I was able to discover was the sensation produced on the end of the finger when passed up the cord, I stated my belief that another child existed in the womb, and that a system of "waiting and watching" alone was indicated for the woman's welfare; to this Dr. G—— readily agreed, as he thought likewise. The reasons for this conclusion were: 1, The almost certain existence of a second child; 2, the possible existence of only one placenta and, in this event, the fatal result to the child by its forcible extraction at this stage of the case; and, 3, the comparative safety of the mother at present, there being no hemorrhage whatever, with complete cessation of all uterine pains.

We then ordered warm carbolized douches twice daily, and that she remain quietly in bed, reassuring her that there was no cause for interference or uneasiness, and left her comfortable. Dr. G——, having imperative duties on hand, requested me to look after the case till further developments.

I saw the patient twice daily, until the evening of February 9th. On my visit then I found that the pains had become more frequent and more intense; the woman was restless, and complaining a good deal. On examination the os was found to be quite patulous and soft; the head was well down, presenting in the first position. We now hoped the case would soon terminate by natural means; but it was soon evident that this was not to be, complete uterine inertia coming on soon afterward. A few minims of ergot were then given, with no decided effect. This was given most sparingly, lest it might retard all future efforts in the case, and thus prove deleterious to both mother and child. I then advised the forceps, applied them, and easily delivered a healthy male child of full term and slightly over. After the delivery of the child the womb continued to show no sign whatever of activity. It was evident now that the only safety for the mother depended upon the thorough extraction of the placenta or placentæ; there being no longer any doubt that we had an additional trouble (retained placentæ) to deal with. Brandy was now given, the patient being much exhausted, when I carried one hand up into the womb and succeeded in gradually enucleating the first placenta, which was firmly adherent and located on the right-hand side of the cavity of the womb, nearly opposite the left Fallopian tube. Of course, before carrying the hand into the cavity, thorough cleanliness was observed, and carbolized oil, two per cent., was applied. After the delivery of this placenta it was examined, and found almost complete, but with only one cord attachment.

The patient was then allowed to rest half an hour, when I again carried my hand into the womb and delivered the second placenta, which was also firmly attached, on the left-hand side of the cavity, just below the Fallopian tube. On detaching this placenta a profuse gush of blood occurred, greatly prostrating the patient, but with stimulants and lowering of head she revived; at the same time constant kneading of the womb was continued, which greatly aided in checking the hemorrhage. In two hours, the patient having thoroughly reacted, she was placed in bed and a hot carbolized douche ordered. On the evening of the 10th, at my visit, I found the tempera-

ture 100° F.; pulse, 98. Carbolized douches were ordered every four hours, with quinine in twenty-grain doses.

On the following evening the temperature was 103° F.; pulse, 120; patient restless and complaining of pain over the womb, the lochia being scant and very foul; urine had passed normally. At this point Dr. G—— and I both agreed that intra-uterine douches were indicated. A long recurrent male catheter (metal) was then disinfected in a one to one thousand bichloride solution and attached to a fountain-syringe, which I carried up into the womb, and the whole cavity was thoroughly douched out with hot carbolized two per cent. solution.

On my visit on the morning of the 12th the temperature had fallen to 102° F., and the patient was fairly comfortable. The douche was again used, and twice on each successive day, morning and evening, for one week following. It was noticed on the third day after its adoption that the temperature had become normal, and the general condition of the patient was better. She then continued to improve, and in four weeks was able to be about her house.

The points of interest in this case are the exceeding fertility of this mother, bearing three children in a little less than twelve months, the length of delay between the first and second child, the existence of two placentæ and the adherence of both, and the marked benefit noted after the use of the intra-uterine douche. In using this latter I found it was not possible to make the water return by the recurrent tube, but by depressing the womb backward it returned freely by the side of the instrument. Of course, great caution must be taken to see that the water does return freely. I am aware of the dangers imputed to intra-uterine injections, but, if carefully managed in well-selected cases, I believe the benefit undoubted. As a further point in connection with this case I may mention that the husband is a man sixty years of age, who had already been the head of two families, and had recently wedded his able coadjutor with the sole idea, he said, of "taking a little comfort in his old age."

PAROTITIS COMMUNICATED FROM BOY TO DOG.

By A. G. P. POORE, M.D.,
WALLONIA, KY.

Case I.—J. D——, a boy, aged seventeen; well-grown for a boy of his age; previous history only fair. Was exposed to mumps on Christmas Eve, at a party given to the young people. Just fourteen days from that date he found that he also had mumps, as many at the gathering on Christmas Eve had. They stayed in his jaws and under his ears just five days, and then they began to jump; they went down to the testicles, and he suffered all the ills that he could in that locality and recovered, with atrophy, however, of those parts.

The patient is now quiet and unassuming, and never boisterous, willing to "live and let live," an attribute he did not possess previous to having the mumps.

Case II.—A dog, belonging to the above-mentioned J. D——. The dog was very fond of him, and stayed in the house under the bed that his master lay on. Previous history good, and he always stayed at home and never fought other dogs. Just fourteen days after his master was taken with the mumps it was noticed that the dog was flopping his ears, and was very much swollen thereabout, and it was thought that he was afflicted with the same malady. This was subsequently proven to be a fact, for just five days after his ears swelled the testicles became enlarged; they still remain much hypertrophied, and J. D—— wants another dog—one that looks well in society.

This dog is now boisterous, will not cultivate friendly relations with any dog of his sex, and does not stay with the boy, as he did prior to having the mumps, but seeks other company.

I would be glad to have an explanation of the occurrence in each case, both human and canine.

FATAL CASE OF DIPHTHERITIC PARALYSIS.

By J. B. STAIR, M.D.,
SPIRIT LAKE, IA.

On February 2, 1889, I was called to attend Lida V——, aged nine, whom I found suffering from diphtheria of twenty-four hours' duration. The disease ran a moderately severe course of five days, at which time the deposit had wholly disappeared, the mucous membrane looked healthy, and restoration to health seemed certain and speedy. Considerable feebleness followed, however, and strength was regained slowly. About four weeks subsequently the little girl laughingly called her mother's attention to the fact that in drinking water some of the liquid refused to "go the right way," but came back through the nose; this difficulty in swallowing was a persistent symptom and became quite troublesome later. Paralysis of the vocal muscles also appeared early, and speech was painfully incoherent. Soon following this the disease attacked the lower limbs, and for a week she could not walk without assistance; but this disappeared to a great extent later. The arms were at no time affected. With some variation as to location there was little change for three weeks. Three or four days before death considerable somnolence developed. But the fatal result was directly due to paralysis of the heart and respiratory muscles, symptoms of which were speedily followed by death.

I have attended twelve cases of diphtheria within the three months past, some of which were much more severe than this one, but in none other were paralytic symptoms manifested, save in one, which had a temporary squint.

HYPERMETROPIC ASTIGMATISM.

Dr. J. A. Tenney, of Boston, Mass., writes: "Dr. Mitchell's case of simple hypermetropic astigmatism, reported in your issue of March 16th, recalled to my mind a similar case I had two years ago, the main features of which I copy from my case-book. Mrs. Alice C——, forty-nine years of age, engaged in teaching in a public school nearly nine months in the year, consulted me, to see if she could be made to see with spectacles. She said she did not believe she had ever been able to see like other people. She was wearing +5 D., O. U., for near work, but her spectacles gave her very imperfect vision. Her vision was $\frac{20}{100}$ in each eye. With a +5.5 D. cyl., axis 95°, her right eye could see $\frac{40}{30}$; and the same cylinder for the left, axis 100°, gave her the same vision in that eye. She could partly see a line lower on the test card. There was no lid trouble. The lady had three dioptres of presbyopia, which fact proved to my mind that neglected optical defects hasten that condition."

AN APPARATUS FOR MAINTAINING THE LITHOTOMY POSITION.

Dr. Horace Packard, of Boston, writes: "I desire to call the attention of the readers of The Medical Record to an exceedingly convenient device for maintaining the lithotomy position. It consists of the McBride yoke with a new pattern of shoulder-straps, giving much greater stability and causing the whole strain to fall upon the shoulders instead of about the neck as in the original form of this arrangement. The shoulder-pieces are triangular, and cut so as to fit the slope of the shoulders, and are fastened together by a cross-strap, passing through a buckle. By the aid of other buckles attached to the straps passing to the crutch, the shoulder-straps may be altered so as to fit any person.

The State Medical Society of Wisconsin.—The next meeting of the State Medical Society of Wisconsin will be held in Milwaukee commencing on the first Tuesday in June.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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A NEW STUDY OF THE ETIOLOGY OF DIPHTHERIA.

IN the *American Journal of the Medical Sciences* for April and May, 1889, Dr. T. Mitchell Prudden contributes the results of a prolonged and painstaking bacteriological study of the etiology of diphtheria. Dr. Prudden gives an interesting account of the development of our present views of the pathology of this disease, and of the bacteriological investigations made by recent observers.

There are, perhaps, still some physicians who believe that pseudo-membranous laryngitis, or croup, is always a different disease from diphtheria. While it is probable that occasionally a croupous laryngitis exists, not due to agents which infect the system, or have contagious properties, such forms are not frequent. The positive differentiation of croup from diphtheria could only be made by finding a separate specific micro-organism, or other material agent, for each clinical type, a thing which has not been done and which seems unlikely ever to be accomplished.

The micro-organism which has heretofore most often been found associated with diphtheria is the bacillus of Loeffler and Klebs. This has been found and cultivated by Loeffler, Klebs, D'Espine, V. Hoffmann, and Roux and Yersin. These and other observers have also found a streptococcus and several other forms.

Dr. Prudden's observations were made upon material taken from twenty-four cases of diphtheria.

He did not find the bacillus of Loeffler in any case.

The only species of bacteria present in almost all cases (all but two), was a streptococcus which he calls a streptococcus diphtheriæ. Next in frequency were certain pyogenic staphylococci which are abundantly found in other diseased conditions.

The streptococcus diphtheriæ consists of sphero-bacteria or cocci averaging one micromillimeter in diameter, and tending to form chains as they grow. This micro-organism was cultivated and the cultures injected into eighty animals, rabbits, hens, and pigeons.

In no case was a typical diphtheria produced; but in many there was marked local or general disturbance, such as suppuration, erysipelas, local necrosis, or diphtheria. Dr. Prudden, however, doubts if true diphtheria can be induced in the lower animals experimented upon; and on the whole he thinks he is abundantly justified in believing that his "streptococcus diphtheriæ" is, in a certain class of cases at least, the cause of diphtheria.

In further support of this view he found that, out of forty cases in which scrapings from throats of children not having diphtheria were cultivated, the streptococcus diphtheriæ was found in twelve instances. These children, however, were all living in wards in which diphtheria had existed, and two of them subsequently developed diphtheria and died. On the other hand, among thirty-one children outside the hospital who were examined, the streptococcus was found in only two cases, and in both of these diphtheria subsequently developed.

Dr. Prudden cannot find any difference, morphologically or in their mode of growth, between the streptococcus found in diphtheria and the streptococcus pyogenes and streptococcus erysipelatos. Bacteriological studies point to an identity in some of their phases between the phlegmonous inflammation, erysipelas, and diphtheria.

A number of experiments were made with regard to the action of disinfectants upon the streptococcus. Regarding this, Dr. Prudden states in his summary: "We have demonstrated that the streptococcus of diphtheria is not readily destroyed by drying, but both in the form of pure cultures on threads and fabrics, and in the pseudo-membrane itself, may retain its vitality for long periods when dried in the air. We have tested its vulnerability when brought in contact with some of the commonly used antiseptic agents, and found first, that the vapor of burning sulphur is very inefficient and unreliable in destroying the germs. We have found that carbolic acid and creolin in considerable strength destroy the streptococci, but in dilute solutions are inefficient; while sublimate, even in very dilute solutions, heads the list in its killing power. But we have also found, as was to be expected, that all of these germicides are much less efficient when applied to the bacteria which lie embedded in the pseudo-membranes and the tissues, than when they are free in the pure cultures."

Our writer is particularly severe upon the time-honored process of sulphur fumigation. Of it he says:

"It is a great pity that in the matter of disinfection of rooms we should, in this region, still be going through with the inefficient mummery of burning sulphur with closed doors, under the impression that it will destroy contagion. This operation has, indeed, a certain archaic picturesqueness about it, and save for the damage that is liable to accrue from the fading of the furniture and hangings, is a tolerably harmless practice; but it savors rather of the propitiatory sacrifices to malevolent deities of centuries gone by than of the intelligence of the present time. Sulphurous acid, as it is usually applied in house disinfection, has been shown over and over again, by the most careful experiments, to be a very inefficient and unreliable disinfecting agent. It may be better than nothing, but in disinfectants—which are often our sole weapons in fighting epidemics—the best is none too good. The efficiency of sulphurous acid may be increased by securing the thorough wetting of everything to be disinfected, but even then it is not great."

The measures suggested in place of the sulphur are removal and burning, or boiling, after soaking in two per cent. carbolic solution, all clothing, bed-linen, hangings, etc. Then everything must be washed in two or five per cent. carbolic acid solutions.

"The obvious lesson taught by a definite conception of the nature of the germ which causes diphtheria is not to dally with fancy mixtures which have at best a moderate germicidal power, but to get at the growing germ, as directly as the seat of the lesion will permit, with some agent which we know will kill it.

"It does not lie within the scope of this paper to suggest any detail as to the treatment of diphtheria. But the points which I would especially emphasize are: First, the evidence here adduced that the germ primarily gains a foothold at the seat of the local lesions, inducing its general effects upon the body at large by the local production of an absorbed ptomaïne; second, the vulnerability of the germ to certain commonly employed germicides; third, the propriety of making germicidal applications to the mouths and throats of individuals liable to infection. It will thus be seen that the immediate practical outcome of these studies, so far as the treatment is concerned, is rather to confirm the importance of local antiseptic methods, and to give precision to the ends which we may hope to attain by them, than the suggestion of anything new."

A POINT IN SCRIPTURE HISTORY.

SEVERAL correspondents of the *British Medical Journal* have been discussing the subject of the physical causes of the death of Christ. M. Ernest Renan, in his "Life of Jesus," says: "Everything tends to show that the instantaneous rupture of a vessel in the heart killed Him at the end of three hours." It may be assumed that M. Renan thought that Christ died from the rupture of an aneurism; if so, the French critic who, in his autobiography, speaks so complacently of his mastery of all human knowledge, is not fortunate in his pathological descriptions.

Sir James Simpson ventured the opinion that Christ's death was caused by a "broken" or ruptured heart. A correspondent of the *British Medical Journal*, Dr. Molony, thinks that there was a pleuritic effusion; while Dr. Charles Steele writes: "I have always felt that the actual morbid condition was either distention of the heart with blood, and coagulation with separation of serum, or effusion of serum into the pericardium. For, while exposure, abstinence, and extreme fatigue existed, in addition there existed mental agony, described in its early period as inducing 'sweat-like great drops of blood falling down to the ground,' of which we can form no conception; and then the check to cerebral circulation produced by the prolonged elevation of the arms of our blessed Lord; then the extreme mental anguish expressed in the words, 'Eloi, Eloi, lama sabachthani;' then the intense relief of the power to say, 'Father, into Thy hands I commit my spirit.' The Roman soldier, we may be sure, struck at the heart, and well knew where it was situated. This we can see in the well-known statues of 'The Gladiators,' where the vanquished one is exposing his distended left thorax to the stiffened flattened hand of his antagonist, who is destined to tear his heart out. The pleuritic effusion theory would induce the idea that if crucifixion had been avoided death might have resulted from natural causes, and would not account for the separate mention of blood and water."

It appears to us that all these speculations are futile and barren; and we have no doubt that very many of our readers will agree with a correspondent, who writes regarding the "points" made by those who have discussed this subject: "No doubt such points may meet the approval of some men, and, judging them from a purely scientific view, no doubt have their points; but I cannot but think that such a serious, awful, and mysterious subject as the death of our blessed Lord should have no question of science (pure and simple) applied to it; in fact, that it is nothing short of sacrilege to treat such a subject on scientific grounds. Your correspondent speaks of our Lord's death as if it were not miraculous; of course, it was both miraculous and a mystery; and so, in my opinion, and in that of a good many others, it should be allowed to rest as too deep, serious, and awful a subject to discuss in a scientific point of view."

THE PREVENTION OF PHTHISIS.

WHILE the infectiousness and contagiousness of phthisis are generally admitted, there has as yet been little attempted in the way of prevention of the disease by means adapted to kill the specific micro-organism. A systematic study of this branch of prophylaxis has recently been made by Dr. Cornet, who read a paper on the subject before the Berlin Medical Society, on March 13th (*Brit. Med. Journal*).

The chief danger, Dr. Cornet thinks, lies in the dried sputum, which becomes turned into a respirable dust. The habit of spitting on the floor is, he thinks, therefore an extremely bad one. In the expression of this opinion Dr. Cornet may be giving utterance to a great prophylactic truth, but he at the same time aims a subtle blow at one of the most cherished habits of the American legislator, who, however, we may add in justice, generally disinfects his sputum with the juice of the tobacco plant. Dr. Cornet, however, insists that in all closed rooms the expectoration must be voided into a spittoon. This plan is simple, does not interfere with social conditions, and entails no heavy expense.

"Cave sputum" is the motto of phthisical prophylaxis. All sputum should be disinfected, or its possible virulence destroyed in some way. Little confidence should be placed in disinfection alone. A five per cent. solution of carbolic acid kills tubercle bacilli only after twenty-four hours; a 1 in 1,000 sublimate solution still later. Sputum should not on any account be left so long.

Dr. Cornet gives a long list of special recommendations. Phthisical patients, he says, should wear their beards short, should use their own spoons, glasses, etc., should avoid kissing on the mouth, etc. If death occurs, the walls of the room inhabited by the deceased should be rubbed with freshly baked bread. Furniture, beds, and linen must be disinfected. Prophylaxis, however, should not begin when the disease breaks out in a family, but the entrance of tuberculosis into the family should be prevented. Neither a consumptive mother nor a consumptive wet-nurse should suckle a child. Cow's milk should be used only when well boiled. Children must early be made to give up the bad habit of putting all possible objects into their mouths. All contact with strangers must be closely watched. Healthy servants should be chosen. Diseased children should be kept away from school. The cleaning of apartments should be carried out as far as possible

without raising dust. In changing houses the walls should be cleaned. Spittoons should be placed in all rooms, on staircases, in offices, factories, etc. Public disinfecting establishments must be constructed. In hospitals isolation of phthisical patients is desirable. An inquiry has shown that the hasty dipping of a laryngoscope into a five per cent. carbolic-acid solution is not sufficient to obviate the danger of infection; it is, therefore, necessary to use a special mirror for each patient. The use of tuberculous meat, and of milk from tuberculous cows, must be prevented by legislative enactment. Special institutions for phthisical patients should be established outside cities.

All this is calculated to add considerably to the burden of having phthisis or having its care. We suspect that it will be a good while before the antiseptic prophylaxis of phthisis is widely adopted; and we doubt very much the wisdom of inoculating society with too deep a sense of the contagiousness of consumption.

News of the Week.

DR. CLEMENT CLEVELAND has been appointed surgeon to the Woman's Hospital in this city.

DR. FREDERICK J. BROCKWAY, of this city, has been appointed House Surgeon to Johns Hopkins Hospital, Baltimore.

"THE MEMPHIS JOURNAL OF THE MEDICAL SCIENCES" is the name of a new medical monthly edited by several physicians of Memphis, Tenn.

FOR KENTUCKY LADIES ONLY.—The Kentucky Senate has passed a bill providing for the appointment of women physicians as assistants in the insane asylums. Residents of other States who have been born in Kentucky will be eligible.

A SENSATIONAL STORY is published in the daily papers to the effect that a young physician accidentally strangled himself while experimenting with Sayre's suspension apparatus.

THE HOSPITAL OF THE WOMEN'S TEMPERANCE HOSPITAL ASSOCIATION OF CHICAGO, which was organized by friends of regular medicine, has, it is said, been captured by certain lady homœopaths.—*Times and Register.*

POLITICS AND HOSPITAL APPOINTMENTS.—We learn from the *Medical and Surgical Reporter* that the Mayor of Philadelphia instructed the President of the Board of Charities and Correction to order the Medical Board to nominate a certain candidate. This the Medical Board refused to do, whereupon the Mayor issued an order that the President of the Board be dismissed, and appointed a new member of the Board and a new president. This action of the Mayor is said to have been instigated by "the representatives of a medical school which has failed to secure the respect of the most intelligent and conscientious members of the medical profession in Philadelphia, and which has been so conducted that this last step is no surprise to those who have watched it carefully."

THE COLLEGE OF MEDICINE of the University of Southern California graduated a class of two at its Commencement, April 12th.

"THE MEDICAL EXAMINER."—A new monthly journal under this name has appeared, devoted to the interests of the medical practitioner in his relations as a medical examiner for the army, navy, life insurance, civil service, etc.

THE GERMAN SURGICAL CONGRESS was held at Berlin, beginning April 24th, and was opened by the president, Professor von Bergmann. Mr. Victor Horsley, of London, was present, and made some notable demonstrations on the subject of cerebral localizations. Much interest was excited also by the address of a Japanese physician, Dr. Kitassata, who, under the direction of Privy Councillor Robert Koch, has succeeded in obtaining pure cultures of the bacilli of tetanus. The Congress held seven sittings. The presidentship for next year was, on the afternoon of the third day, again conferred on Professor von Bergmann. The close of the Congress took place on the afternoon of April 27th.

LONDON has a band of ambitious medical reformers, which is organized under the name of "The Committee for the Suppression of Electrical Quackery." There is a great field before it.

WASHINGTON'S MEDICAL HISTORY.—General Washington was a man six feet two inches high; large-boned, vigorous, and, until the latter part of his life, free from much physical ailment. He had the small-pox when a young man, and his face remained pitted. During Braddock's campaign, in 1755, he had a fever, which Dr. Craik relieved by James' powders. After this campaign he suffered from repeated attacks of dysentery and fever. Washington was apparently not in vigorous health when he became President, and about this time of year, one hundred years ago, he was suffering from "anthrax," or carbuncle, which for a time seriously threatened his life. He died finally, as is well known, from suppurative tonsillitis and laryngeal œdema. Regarding this the *Boston Medical and Surgical Journal* says, pertinently: "The recent strictures of a metropolitan journal upon the medical profession of his day for having hastened Washington's death, while very likely true so far as the main question, that of bleeding, is concerned, will nevertheless bear the comment that venesection was so far a measure of domestic treatment at Mount Vernon that Washington had had himself bled by his overseer before the doctor's arrival, and considered the amount of blood drawn by that functionary — eight ounces — entirely inadequate." Washington's most favored and constant medical attendant was Dr. James Craik, a Scotchman, and an army surgeon.

PRIZE WINNERS.—The Parkes triennial prize of £100 and a gold medal has been awarded to Surgeon R. H. Firth, for the best essay "On the Etiology and Prevention of Yellow Fever." Mr. Jonathan Hutchinson, Jr., F.R.C.S., has gained the Jacksonian prize of the Royal College of Surgeons of England, 1888–89. The subject of the prize for 1890 is the "The Nature and Treatment of Injuries to the Spinal Column, and the Consequences arising therefrom."

SPIRITS OF CHLOROFORM INHALATIONS and spirits of chloroform locally are claimed by Dr. Clemens to cut short attacks of acute rheumatism.

THE TREATMENT OF HÆMOPTYSIS.—Dr. Böttrich, of Hagen, finds opium, with acetate of lead, the most efficacious when bleeding from the lungs has just set in. It combines the action of hæmostasis and diminution of the cough. After two or three days he gave instead hydrastis, which drug he ordered from the beginning when the hemorrhage was only slight. It had mostly a very decided effect. In one case of hysteric hæmoptysis its administration entirely stopped hemorrhage after the first week. Also in cases of frequent bleeding from the nose, hydrastis proved very serviceable, not against a single attack of profuse epistaxis, but against repeated recurrence of the bleeding. In such cases he has used the drug for the last two years, and he is very well satisfied with the results.

THE EPILEPTIC HOSPITAL at Baldwinsville, Mass., has received a grant of $50,000 from the State.

THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA held its one hundred and fifteenth Annual Commencement on May 1st, and graduated a class of one hundred and twenty-eight physicians and fifty-eight dentists.

"THE ABOLITION OF THE CORONER IN MASS." is the somewhat curious title of an article announced from Mr. Tyndale, of Boston. There is a feeling in this city that the abolition of the average coroner in mass or in detail would be a great boon to society, though it would leave one less place for the "boys."

FROM ART TO SEWAGE.—"It seems to me," muses one of the characters in "Robert Elsmere," "that in my youth people talked about Ruskin; now they talk about drains."

THE SUM of $8,000 has already been collected for the Langenbeck Memorial.

THE NIGHT-SWEATS OF PHTHISIS can be controlled, it is said, by eight to ten grains of sulphonal.

MEDICAL JOURNAL SYNDICATE.—A combination has been effected between the *Medical Register*, *Philadelphia Medical Times*, and *Dietetic Gazette*, Dr. J. V. Shoemaker retiring from the editorship of the *Register*, owing to the pressure of other literary work. Dr. Waugh, editor of the *Times*, will assume editorial control of the *Times and Register*.

SOMETHING FOR EVERYONE.—In these days of persistent office-seeking—when there are many more applicants than there are offices to distribute—we are reminded that when Abraham Lincoln was President he was taken ill, and the physician told him he had varioloid. "What is it?" he asked. "Varioloid," said the doctor. "Good enough," said Lincoln; "I've something now I can give everybody."

"THE KANSAS MEDICAL JOURNAL" is the title of a new medical journal recently published at Topeka. It is edited by Drs. W. L. Schenck, J. E. Minney, and S. G. Stewart.

AN ASCETIC SOCIETY.—The North Carolina State Medical Society, which met at Elizabeth City on April 16th, respectfully declined to go on an excursion or attend a banquet tendered by the citizens of the town. We are pleased to note the devotion to pure science shown by our Southern brethren.

THE TENNESSEE STATE LEGISLATURE has enacted a law regulating the practice of medicine.

THE TWENTY-SECOND ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION will be held at Banff, N. W. T., on the 12th, 13th, and 14th of August next.

THE CINCINNATI ACADEMY OF MEDICINE is reported to have had a little trouble lately on account of the presence among its members of some lady physicians. At a recent meeting of the Academy, a report was made by a gentleman on the radical cure of hernia. At the close he wished to show three male patients on whom he had operated successfully. Two "lady doctresses" were present, and the men positively refused to exhibit *themselves* till the ladies absented themselves. The president requested the ladies to retire, which they did. One of them, however, on returning asked the cause of her being obliged to withdraw. Despite explanations the lady was unsatisfied, and said if women were not allowed all the privileges of the Academy she thought they should pay only two dollars annual dues instead of three.

PROLONGED GESTATION.—Dr. L. Mervin Mans, U. S. A., reports (*New York Medical Journal*) a case of prolonged gestation which he believes authentic. The period of pregnancy, calculating from the time of last menstruation, was 334 days. At the end of this time the patient bore a healthy male infant weighing nine pounds. This almost breaks the record, though Simpson mentions a case in which delivery occurred 336 days after menstruation ceased. Playfair places the extreme limit at 295 days.

THE SAMUEL D. GROSS PRIZE.—The first quinquennial prize of $1,000, under the will of the late Samuel D. Gross, M.D., will be awarded in 1893. The conditions annexed by the testator are, that the prize "shall be awarded every five years, to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations; the candidates for the prize to be American citizens." It is expressly stipulated that the successful competitor shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery. The essays, which must be written in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, before June 1, 1893.

WHAT IS A LAST ILLNESS?—The French courts were recently called upon to determine the exact sense to be attached to the expression "last illness." The question arose on a claim made on the estate by the medical attendant on the wife of a tradesman who, shortly after the treatment and recovery of his wife, was declared bankrupt. According to the French law, the bill for attendance on a person during his "last illness" is privileged to take precedence, but the trustee contended that the "last illness" referred only to the malady culminating in death. The doctor, on the other hand, urged that the expression should be taken to mean exactly what it says and nothing more, and after full consideration the tribunal ratified his view, and gave judgment in his favor.—*Medical Press and Circular.*

Society Reports.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

Ninety-first Annual Session, held at the Hall of the Faculty, Baltimore, Md., April 23, 24, 25, and 26, 1889.

JOHN MORRIS, M.D., PRESIDENT, IN THE CHAIR.

FIRST DAY, TUESDAY, APRIL 23D.

THE PRESIDENT'S ADDRESS.

AFTER greeting the members, he said that the Faculty was now celebrating its ninety-first birthday, and that he had watched its career for nearly a half-century, and was the only surviving member who had entered its gates by examination. He then addressed the members on the following subject:

THE PHYSIOLOGY AND PATHOGENESIS OF CRIME; HOW FAR CAN MEDICAL MEN AID IN ITS PREVENTION?

The teachings of the day appeared to be to make the physician a naturalist—a physicist. In studying these sciences, the higher study should not be neglected—the study of society—the study of man and his relations to his fellow-men, the advancement of the race through its psychical cultivation. Millions of diseased men remain uncared for, and the causes that have led to their degeneration are overlooke and unstudied. Physical culture is studied in the schools, but the character is not built up. We attempt to reform criminals, to rehabilitate them, and ameliorate their condition. We should use prophylaxis. To prevent a man from becoming a criminal, we must begin with him as a child. There is nothing practical in our moral and religious education. Even the sense of right and wrong is not clearly, effectively, and practically taught. It is only the education that seeks to stimulate every noble purpose and capacity that can avail to form or change character, and this kind of education is not obtained in the school and the church. Everyone cries out against immorality, but no steps are taken to create morality, to make morality a public sentiment, to make it a subject of national pride. Yet these are the prominent, the prevailing influences in Japan. There, crimes of violence and outrage are scarcely known.

Where the law of heredity is recognized, it is the duty of the medical man to forewarn parents, and to suggest the proper education and surroundings to render innocuous this taint of blood. This law of heredity obtains even more in moral than in physical traits, although these latter also, as is known, can be transmitted. "Breeding back" would often render a happy change in our economy. "Begin with a man's grandfather, if you wish to reform him." The family doctor has disappeared, but he must be brought back to occupy a higher and a wider field. We are born with unalterable tendencies, which are not always evil. The Jew and the Gypsy are examples of unalterable types. Psychology rarely enters into the education of a physician, and yet all cases of moral responsibility are associated with it. Ordinarily the physician treats the body alone, irrespective of the mental organization. He is but half a physician. The body yields to the mind, the mind to the body rarely. The weakness or total absence of certain powers of mind is rarely noticed in children, and yet this observation is of the highest importance in shaping their future lives. The physician should be consulted in regard to the education of a family of children, and to do this he must have been trained by a long course of mental observation.

No man is born a criminal. We are not taught to value the truth. Perjury is the most common crime in our country, and yet it is rarely punished. The Church and State have done little to regulate marriage, except the Roman Catholic Church and the Church of England. Marriage should be regulated by law. Paupers and criminals should be prevented from marrying. The Legislature of Kentucky has a bill now before it to regulate marriage. The tramp and malingerer should be stamped out; they need not exist. It is as harmful to bring insane children into the world, as it is to drive them insane by bad usage. The habitual criminal, man or woman, should be deprived of the power to procreate.

In all our original research, let us not forget these questions. Let it be directed to the foundations of life; to the evolution and structure of character; to the evolvement and building up a higher intellectual and moral constitution of the race; not to a childish search after pebbles and toys, of jackstones in place of the true gold. In any and every event our work will go on—our profession will live as long as the ages endure. The more we advance in knowledge, the more the world will need us. As the astrologist, the alchemist, the barber of the middle ages, gave place to the pompous and pedantic oracle of the seventeenth and eighteenth centuries, with his latinity, his lancet, and his squirt—the last like the spear of Telamon which healed at one end the wound inflicted by the other; and as the oracle was followed by the man of the present time, with his ologies and marvellous nomenclature, his thousands of drugs, his hypodermatic syringe, and his microscope seeking after the unseekable; so in the future this present man will be succeeded by a race of men of advanced thought, of truer convictions, of stronger culture, of higher and broader views, to the end that the State may be enlightened, society improved, humanity benefited, and religion exalted.

SECOND DAY, WEDNESDAY, APRIL 24TH.

THE ANNUAL ORATION

was delivered by PROFESSOR WILLIAM OSLER, fellow of the Royal College of London, late of the University of Pennsylvania, and recently elected Professor of the Practice and Theory of Medicine of Johns Hopkins University.

He spoke principally of the need of State Boards of Examiners to decide on the fitness of medical graduates to practise. He said: "In this country a man can follow the vocation he pleases, subject only to such restrictions as may be necessary for the public welfare. The right to regulate the practice of medicine rests with the State, and I believe it is everywhere acknowledged that this right comes within that general public power which extends protection to the lives and limbs of the citizens. At present this power is very variously exercised in different States. In many, no regulations whatever exist. Anyone who wishes, irrespective of qualifications, can practise. In a majority of States, however, there are restrictions which demand evidence on the part of the practitioner that he has studied for a longer or shorter period at an incorporated school. Practically, the rule prevails that, with a diploma from a chartered school, he can begin at once, without any hindrance other than that relating to registration. The educational duties of the State do not here extend beyond the system of common and normal schools, though in a few, higher university works are also undertaken. Special education does not receive support from the public revenues. Schools of law, medicine, engineering, theology, all the special branches of study, are private enterprises chartered by the State, and maintained by fees from pupils or by the munificence of private friends. Certain privileges are granted to these institutions by the State, the most important of which, in the medical school, is the recognition of the diploma as a qualification for practice. So unsatisfactory, however, has this system proved, that there is, on the part of the public and the profession, a growing sense of the necessity for a radical change, as shown by the number of States in which bills have either been already passed, or have been before the legislatures, dealing with the problem.

"It is universally conceded that the basis of legislation is the necessity of protecting the people against the depredations of ignorant graduates and of quacks. The aim is to provide a minimum standard of qualification to be required of all persons who desire to follow the calling of physician or surgeon.

"If we look around upon those engaged in the practice of medicine, we find that an overwhelming proportion belong to the regular or so-called old schools; a second small division profess to follow Hahnemann; while a third, still smaller, neither one thing nor the other, but a little of both, profess a judicious eclecticism. These three bodies have schools, medical journals, and in each State have a more or less complete organization. In the sight of the law all are equal. This unhappy division of the body medical is not limited to professional matters, but is complicated with ethical questions of the highest moment. The outcome of it all has been that there are hostile camps and bitter war.

"The homœopathists and the eclectics will, I think, concur in the necessity for a full and proper curriculum of study in the great branches of medicine, and know no 'isms.' The differences only become glaring when we touch the subject, in which among members of each of the so-called schools the greatest individual differences of opinion exist. The divergence of opinion on this one branch separates absolutely the different classes of practitioners from each other. I do not say that this should not be so. Antiquated dogmas are professed in opposition to a rational and free science.

"We cannot, however, escape from the important fact that, in the eyes of the law, we stand equal, and if we wish legislation for the protection of the public, we have to get it together, not singly. I know that this is gall and wormwood to many, but it is a question which has to be met fairly and squarely. When we think of the nine or ten subjects we have in common, we may surely, in the interest of the public, bury animosities and agree to differ on the question of therapeutics. In connection with license to practise there are, it seems to me, three courses open:

"First. A continuance in the plan at present prevailing, which makes the college the judge of the fitness of the candidate, and State supervision is only so far exercised that the diplomas are registered if from legally incorporated schools.

"Second. The appointment by the State, or by parties so deputized, of a board of examiners which shall, irrespective of diplomas, examine all candidates for the license.

"Third. The organization of the entire profession in each State into an electorate, which shall send representatives to a central parliament, having full control of all questions relating to medical education, examination, and registration. These various plans are at present in operation in different parts of the continent. Colleges have practically had a monopoly for years, as the diploma has carried with it the privileges of registration. To all intents and purposes, the medical schools of the country are private organizations, and have direct pecuniary interests in the size of the classes. These chartered corporations are wholly irresponsible, without supervision by the State, the profession, or the public. It would not be difficult, without fear of just rebuke, to bring a railing accusation against them for persistently acting in their own interest, and not in the interest of the public, but the time has passed for this. Yet it is surprising to think that so many men, distinguished in every way in their profession, cultured and liberal, still cling to, and even advocate, the advantages of an irresponsibility which has made the American system of medical education a by-word among the nations."

At the conclusion of the oration the faculty, upon a motion of Dr. Morris, and after remarks by others, tendered Dr. Osler a vote of thanks. He replied in a few well-chosen words, and said he was glad that his lot was cast in Baltimore.

SECTION ON SURGERY.

RANDOLPH WINSLOW, M.D., CHAIRMAN.

THE CHAIRMAN called attention to the subject of

SURGERY OF THE CENTRAL NERVOUS SYSTEM,

and dwelt first on the importance of understanding thoroughly the general and topical anatomy of the brain, and then referred to the important results obtained by experiments on animals, by clinical observations, post-mortem examinations, and by electrical stimulation of the exposed human brain, during the performance of surgical operations. The cortex and base are most accessible and amenable to surgical procedures. Tumors of the brain are of more frequent occurrence than general practitioners think. W. Hale White and Victor Horsley have done the best work here. Cranio-cerebral topography is a new and very important study, and has been mainly used with surgical treatment of epilepsy, brain abscesses, etc. The study of

SURGERY OF THE SPINAL CORD

is of more recent date. Few cases have been reported.

In the same Section DR. OSCAR J. CORKERY reported a case of

TREPHINING FOR CEREBRAL ABSCESS,

with the result of removing the pus and giving motion to a paralyzed arm and leg; but the patient eventually died.

DR. JOHN C. JAY then reported

A CASE OF ENTIRE EXSECTION OF THE ULNA, WITH RESECTION OF THE HUMERUS AND RADIUS,

in a woman forty-nine years of age. Complete anchylosis did not occur and the elbow remained movable to the extent of several inches, and thumb and two fingers could be used. The operation was fully justified by the excellent results.

SECTION ON PRACTICE OF MEDICINE.

WILLIAM B. CANFIELD, M.D., CHAIRMAN.

DR. CANFIELD took up the following subjects:

I. THE RELATION OF DUSTY OCCUPATIONS TO PULMONARY PHTHISIS.

He began by saying that the pulmonary diseases, caused by the different kinds of dust, had received a variety of names according to the kind of dust inhaled, but collectively they were all covered by the name "pneumonoconiocis." Ever since Koch's discovery of the tubercle bacillus, and the gradually improved classification of lung diseases, there seemed to be doubt whether these dust diseases were tuberculous or not. The dust inhaled by miners in badly ventilated mines gradually overcame the action of the ciliated epithelium, and penetrated to the alveoli of the lung, whence they found their way into the subepithelial layer, where, unless rendered harmless or devoured by the greedy phagocytes, they set up a fibroid condition of the lung. Most writers agree that the fibroid condition is a barrier to the growth and multiplication of the bacillus.

He then related the case of a miner who had a fibrosis of the lungs, and in whose sputa bacilli were always found at every examination, and yet this man improved and is now well. His conclusions from this case were:

1. Patient had no previous history of, or predisposition to, tuberculosis.
2. He contracted a disease with which tuberculosis is supposed to be very rarely found.
3. He had tubercle bacilli in abundance in his sputa.
4. He is now entirely well.

II. THE PRESENT ASPECT OF THE QUESTION AS TO THE ETIOLOGY OF PNEUMONIA.

Pneumonia results from something more than "catching cold." Sailors lead an exposed life and rarely have

it. A large number of investigators have been looking for the specific organism. Talamon did some excellent work. Friedländer's pneumonococcus was accepted for a time, but the investigations of Fränkel and Weichselbaum have shown Friedländer's organism to be only an accidental accompaniment of pneumonia. Good work has been done by Gamaléia, Sternberg, Lipari, and others. He referred to the theory of phagocytosis in connection with this subject, and related his own experience in the bacteriological study of this organism. He then took up

III. THE MORE RECENT TREATMENT OF PULMONARY PHTHISIS,

and spoke of the failure of Bergeon's method. Treatment has been carried out by:

1. Internal administration of drugs or medicines.
2. Intra-pulmonary injections.
3. Inhalations.
4. Climate. And cures occasionally occurred
5. Spontaneously.

1. The principal remedies recommended of late were creasote, tannin, calomel, and morrhuol. He had used creasote with some success.

2. Intra-pulmonary injections had been discarded.

3. Inhalations had no lasting influence on the lung-tissue; creasote, hydrofluoric acid, and hot air had all been used. Weigert claims to get some good effects from the latter.

4. Climate, in early cases well selected, is the best treatment. Many observers, particularly foreigners, gauge the improvement or the reverse by the diminution or increase of bacilli found. This hardly seemed to be the proper test. Patients often do well when their sputum is laden with bacilli. Cures may result

5. Spontaneously, as Vibert has shown in his statistics, gathered from the Paris Morgue. In one hundred and thirty-one persons between twenty and fifty-five years of age, all of whom died violent or sudden deaths, in seventeen, or sixty-eight per cent., evidences of cured consumption were found in the lungs. These facts should be borne in mind by those reporting cures from the use of new remedies.

DISCUSSION.

Dr. W. S. Forwood, of Darlington, Md., said that the "flint disease," as it was called in Harford County, was very common and very fatal with the workmen in the quarries. The men all have this disease, which begins very insidiously as a slight cough and grows worse. It ends like consumption, but the beginning is very different. In reply to Drs. Randolph Winslow and A. K. Bond, he said that no one escaped the disease after working in the quarries, and all were permanently injured, even if they gave up the occupation in a year.

Dr. J. T. Wrightson, of Newark, N. J., said that lung disease was very common among the hat-makers of his city, but he attributed it not so much to the dust as to drinking.

THIRD DAY, THURSDAY, APRIL 25TH.

SECTION ON OBSTETRICS AND GYNECOLOGY.

T. A. Ashby, M.D., Chairman.

The Chairman remarked first on the growing tendency to abandon empirical methods, and to employ more rational views of pathology and treatment. The study of abdominal surgery claims attention; exploratory laparotomy is the only correct means to use in some cases; laparotomy for pelvic abscess is a subject gradually gaining upon the professional mind. Primary laparotomy in tubal pregnancy has been brought into conspicuous prominence of late, but the greatest interest had been aroused in the use of

ELECTRICITY IN GYNECOLOGY.

He then discussed the various diseases for which electricity had been used, and then showed how much had been accomplished by it in a short time.

Dr. L. E. Neale then exhibited

A NEW OBSTETRICAL FORCEPS

which was a modification of Howard's modification of Tarnier's. He called it "Neale's Forceps." He claims superiority on the ground that it is all hard metal and can be made thoroughly aseptic, has Simpson lock, blades are narrowing, preventing rupture of perineum.

DISCUSSION.

Dr. P. C. Williams praised it very highly. He liked Tarnier's handle. In using it as ordinary forceps, he thought there was not force enough at the handle to manage it. It has many advantages which made it a superior instrument to the others.

SECTION ON MATERIA MEDICA AND CHEMISTRY.

T. Barton Brune, M.D., Chairman.

Dr. Brune read a paper on

SUGAR TESTING WITH SPECIAL REFERENCE TO ALCAPTONURIA,

in which he reviewed the various substances giving a sugar reaction, and the danger of trusting too much to one test alone.

In the same Section Dr. W. B. Platt took up the subject of

SURGICAL THERAPEUTICS,

in which he considered all curative, non-mechanical agencies employed in surgical cases, whether after accident, operation, or for surgical diseases. These he classified as anæsthetics, antisyphilitics, and antiseptics. In the first class he discussed protoxide of nitrogen, chloride of methyl, and cocaine. Under antisyphilitics were mentioned mercury by inunction, hypodermic injections, and gray oil. The antiseptics were carbolic acid, creolin, and iodoform.

Dr. Whitfield Winsey then read a paper on

HYPNOTICS AND ANTIPYRETICS.

In the former case he reviewed what is now known of sulfonal, and drew the following conclusions:

1. It is a true hypnotic.
2. It is easy of administration, being without taste or odor.
3. It is safe, prompt, efficient, with no objectionable after-effects.
4. No sulfonal habit is contracted.

Under antipyretics he went very thoroughly over the literature of antipyrin, antifebrin, and phenacetin.

Dr. H. Salzer read a very exhaustive paper on

LAVAGE,

and gave the indications for its use in adults and children, and his experience with it. In the

DISCUSSION

which followed, the remarks were confined to glycosuria and the sugar tests.

Dr. A. K. Bond thought the testing for sugar was not so simple a method as it appeared. He thought the phenylhydrazin chloride test was the most satisfactory, but agreed with Dr. Brune that no one test should be used alone.

Dr. George J. Preston said it was important to know whether the amount of sugar increased or decreased.

Dr. William B. Canfield thought no test was reliable. He had succeeded with other tests where the phenylhydrazin chloride test had failed. He thought the use of the microscope was an objection to this test, as probably two-thirds of the medical graduates of the United States did not know how to use the microscope.

Dr. I. C. Hemmeter was surprised that the saccharimeter had not been mentioned. Salkonsky and Leube proved that it showed the presence of one-tenth of one per cent.

Dr. T. B. Brune, in closing, said he regretted to bring such a long discussion before the Society. The phenylhydrazin chloride test had not been long enough before the medical public to judge of it yet. Some other substance, as carbohydrates, may reduce these crystals.

SECTION ON SANITARY SCIENCE.

Dr. W. C. Van Bibber read a report on the subject of

QUARANTINE,

in which he discussed the Maryland Health and Quarantine Establishment, and referred particularly to yellow fever.

Fourth Day, Friday, April 26th.

SECTION ON ANATOMY, PHYSIOLOGY, AND PATHOLOGY.

William H. Welch, M.D., Chairman.

The Chairman took for his subject

HYDROPHOBIA.

He said that although, since Pasteur's first publications on this subject, it has received the widest ventilation in medical journals, no apology is needed for a fresh critical review, so rapid are the additions to our knowledge, and to such an extent does the estimation of the value of much of Pasteur's work depend upon results which can be determined only by the lapse of time. Although Pasteur's preventive inoculations against hydrophobia constitute the central point about which controversy has waged, it is not to be forgotten that Pasteur's discoveries, and the investigations aroused by them, have shed much light in many directions upon one of the most mysterious and fatal diseases. We are better able now than ever before to estimate the value of the recent studies of rabies, and to consider the efficacy of the Pasteurian inoculations against hydrophobia.

Dr. Welch reported the results of post-mortem examinations which he had made in three cases of hydrophobia in human beings. In one case he had made serial sections of the medulla oblongata and pons from the second cervical nerve upward. The lesions in this situation were small hemorrhages, accumulations of leucocytes in large numbers in the perivascular lymph-spaces and in scattered foci in the neuroglia, and thrombi composed of blood-plates and of leucocytes in small blood-vessels. These lesions were for the most part microscopical, and their extent and distribution could be determined only by the examination of a large number of sections from different parts. The lesions were especially well marked in and near the nuclei of origin of the spinal accessory, pneumogastric, and glosso-pharyngeal nerves, and in the motor nucleus of the trigeminus. Cases have been reported in which even more extensive lesions than these have been found, their severity depending apparently in large measure upon the duration of the disease. While it cannot be claimed that these lesions are peculiar to hydrophobia, or by themselves suffice for its anatomical diagnosis, it is incorrect to suppose that hydrophobia is a disease without demonstrable anatomical lesions which bear a manifest relation to the symptoms of the affection.

Far more important than the additions to our knowledge of the pathological anatomy of rabies following Pasteur's discoveries, are the contributions to a better comprehension of the causation of the disease. Before Pasteur's publications on hydrophobia, dating from 1881, about all that we knew of the virus of rabies was that it is contained in the salivary glands and their secretion, and that infection often follows the bites of rabid animals. We now possess valuable information concerning the properties of the rabid virus, its distribution in the infected body, the manner of its transmission, the singular differences in its action according to the seat of its inoculation, and the means for producing immunity against its invasion.

Although there is no reason to doubt that the infectious agent in the virus of rabies is a micro-organism, no actual demonstration of this organism has yet been made. From material obtained from a series of rabbits which were inoculated at the pathological laboratory of the Johns Hopkins University, with hydrophobic virus obtained from the medulla oblongata of a man dead of the disease, and which served to confirm the statements of Pasteur as to the behavior of these animals when inoculated with the rabid virus, efforts were made to demonstrate, both in the tissues and by means of cultures, some specific micro-organism, but with entirely negative results. While we are not acquainted with the specific organism causing hydrophobia, we know many of its properties.

The virus of rabies is destroyed by comparatively low temperatures, exposure for one hour to a temperature of 50° C., sufficing for this purpose. It is killed in a short time by drying—certainly within four days when exposed in thin layers capable of rapid desiccation. It is destroyed by exposure to the direct rays of the sun, even when surrounded by conditions preventing much elevation of temperature. According to Babes, the virus is more resistant to the action of corrosive sublimate and of carbolic acid than most micro-organisms; but it usually loses its infectious properties after exposure for three hours to the action of 0.1 per cent. sublimate, or one per cent. carbolic acid solution. Galtier has pointed out the important fact that the virus of rabies may be demonstrated after forty-four days, and perhaps longer, in the cadavers of buried animals. A practical means of preserving the virus is to place the brain or cord of the infected animal in pure glycerine which may be diluted with water, and should be occasionally changed.

It has been ascertained that the occurrence of infection with rabies depends largely upon the part of the body and the character of the tissues into which the virus is inoculated. The disease always develops after inoculation of the virus into the brain, or upon its surface, or into the eye, the period of incubation being shorter and more definite after subdural inoculations. Inoculation into the substance of nerve-trunks appears to be equally successful in rabbits, but somewhat less certain in dogs, although even with the latter, inoculation into the pneumogastric nerves does not fail. Intra-venous injections do not produce the disease in ruminants, unless very large quantities are used, and may fail in rabbits, and especially in dogs. Especial importance attaches to the behavior of subcutaneous injections of the virus of rabies. Dogs often resist infection from the injection of considerable quantities of even the most intense virus into the subcutaneous tissue. Ferran's superintensive method of producing immunity in human beings is to inject at once the strong virus into the subcutaneous tissue, and this has been done in over two hundred cases without injury. If the injection be made into muscular tissue, infection is more likely to follow. Di Vestea and Lagari have shown that, while simple subcutaneous injections are often unsuccessful in producing rabies, the application of the virus to the divided ends of nerve-filaments in a cutaneous wound is generally efficacious in causing the disease. Although deep and severe bites of rabid animals are the most dangerous, hydrophobia may result simply from a mad dog licking a scratch in the skin.

One of the most important discoveries of Pasteur is the demonstration of the fact that, in animals or human beings which have died of hydrophobia, the virus is contained most abundantly in the central nervous system, and especially in the medulla oblongata. It is found constantly also in the salivary and lachrymal glands, sometimes in the pancreas, but it is usually absent from the blood, kidneys, spleen, and liver. Only exceptionally is it present in the

mammary glands and the milk. It is very rarely transmitted to the fœtus through the placenta.

There has been considerable discussion as to the manner in which the virus is conveyed from the seat of inoculation to the central nervous system. The evidence points to the transmission of the virus along the nerves, in fact it is claimed by Helman and others that the virus is capable of multiplication only in nervous substance. Roux and others have found the virus present in the nerves of a bitten extremity when it has been absent in corresponding nerves of the opposite side. By killing animals at the proper period it has been ascertained that after inoculation in the tail or posterior extremities the virus makes its appearance in the posterior part of the spinal cord sooner than in the medulla oblongata, while the reverse holds true when the inoculation is made in the head or anterior part of the body. These observations, taken together with the inefficacy of intra-venous injections and the absence of the virus from the blood, lead to the conclusion that the virus passes along the nerve-trunks, although we have no information as to how this is accomplished.

It is a significant fact, which should be remembered in judging the results of Pasteur's treatment, that there is a period of so-called latent development of the virus in the central nervous system. In rabbits inoculated with the strongest virus (virus fixe) the period of incubation is six days, but as early as the fourth day the virus has been found in the medulla oblongata. Doubtless, therefore, in human beings the virus is present for a longer or shorter period in the central nervous system before any characteristic symptoms of rabies appear. Careful observation has shown that in rabbits this period is not really a latent one, but is accompanied by elevation of temperature, increased frequency of respiration, slowing of the pulse-rate and loss of weight.

Dr. Welch said that there can no longer be any question that it is possible to render animals immune against rabies, both before and after inoculations which would otherwise cause the disease. The independent and careful experiments of Ernst in this country are free from all partisan bias and have amply confirmed the statements of Pasteur on this point. The methods employed by Pasteur for protective inoculation against hydrophobia have been so often and so fully described in medical and other journals that Dr. Welch did not consider it necessary to repeat the description on this occasion. Those inoculations are the most effective in preventing the disease which are undertaken soon after the reception of the poison with a large quantity of virus, and with the speedy employment of material containing the strongest virus (virus fixe). Animals may be rendered immune by single injections into the blood or the subcutaneous tissue of a large quantity of strong virus, whereas dogs which are bitten by mad dogs and which do not develop the disease, as often happens, are not left immune. Dogs which have once been rendered immune against rabies may preserve this immunity for at least two years, and doubtless for a longer period.

Pasteur attributes the immunity to the action of some substance which he calls "matière vaccinale" contained in the virulent material, but not identical with the micro-organism causing rabies. That immunity against infectious diseases may be secured by the injection of chemical substances produced by the growth of specific bacteria was first demonstrated by Salmon and Smith in the case of hog cholera, and has been subsequently demonstrated by Roux and Chamberland for malignant œdema, and by Woodridge for anthrax. It has not yet been found possible to prove conclusively the correctness of Pasteur's supposition in the case of rabies, but there is much which speaks in its favor.

Encouraged by the result of his experiments upon animals, Pasteur, in July, 1885, first applied to a human being his method of preventing hydrophobia by successive inoculations of the virus contained in the rabbit's medulla subjected to drying for different periods. During the years 1886, 1887, and the first half of 1888, there have been treated, under Pasteur's supervision, either by the simple or the intensive method of inoculation, 5,374 persons who have been bitten by animals either proven or suspected to be rabid. The mortality from hydrophobia, including even the cases which developed within a day after the cessation of treatment, was, in 1886, 1.34 per cent.; in 1887, 1.12 per cent.; in 1888, 0.77 per cent. If the fatal cases which developed within a fortnight after the end of treatment, and in which there is reason to believe that the inception of treatment was too late, be excluded, the mortality for 1886 falls to 0.93 per cent.; for 1887, to 0.67 per cent.; and for 1888, to 0.55 per cent.

Dr. Welch considered the various objections which have been made to Pasteur's methods, and to the value of his statistics. Some of these objections are of a purely hypothetical nature. Much force has been attached to Von Frisch's experiments which seemed to some to invalidate the scientific basis of Pasteur's method of treatment. Von Frisch claimed that it is impossible to render animals immune after the reception of the virus of rabies in a manner certain to produce the disease. In opposition to Von Frisch it has been demonstrated by Pasteur and others that in a large proportion of cases the development of rabies may be prevented in dogs which have been inoculated beneath the dura mater. with the strongest virus. The treatment, however, must not be deferred under these circumstances later than the second day, and must be by the intensive vaccinations. Bardach succeeded in this way in saving 60 per cent. of the dogs inoculated beneath the dura mater. This test is evidently the most severe one to which Pasteur's preventive treatment can be subjected, one far more severe than is required to meet the ordinary channels of infection with rabies. It must be admitted, therefore, that Pasteur's treatment rests upon a satisfactory experimental basis.

The criticisms raised against drawing favorable conclusions from the large mass of statistics published by Pasteur have been many, but the most important are that we are ignorant of the mortality following the bites of rabid animals, and that there are included in Pasteur's statistics an indeterminate number of persons bitten by animals not rabid. As regards the first point there are various careful collections of statistics which show an average mortality of about 15 per cent. (Leblanc, Dujardin-Beaumetz, Horsley). All admit that bites by rabid animals on the head and face furnish a much higher death rate than this, it being given as 88 per cent. by Brouardel. To meet the second criticism Pasteur's statistics, which are published monthly, are arranged in tables which embrace: (A) Persons bitten by animals proven experimentally to be rabid; (B) cases in which the existence of rabies is certified by a veterinarian; (C) cases in which there is reason to suspect rabies in the animal. Pasteur's statistics for class A—that is for persons bitten by animals proven experimentally to be rabid—for the years 1886, 1887, and the first half of 1888 yield a mortality from rabies of 1.36 per cent., or if those who died within a fortnight after treatment be excluded, of 1.09 per cent.

Dr. Welch collected from Pasteur's reports for the year 1887, and the first half of 1888, those bitten on the head and face proven experimentally to be rabid. There were 59 cases with 4 deaths from rabies during treatment, and 2 following treatment. Of the latter one was seized three days after the cessation of treatment, and it is reasonable to suppose that in this case the treatment was begun too late. If this case and those dying during treatment be excluded there remain 54 cases with 1 death, a mortality of 1.85 per cent.

In view of the universally conceded high death rate following bites on the head and face by rabid animals, this result leaves no room for doubt as to the efficacy of Pasteur's treatment, although it is not unfailing.

It is a sufficient answer to the assertion which has been

made that Pasteur's intensive inoculations are dangerous, in that they may actually produce the disease, that the mortality from rabies is strikingly smaller after the application of the intensive method than after the simple treatment.

Dr. F. T. Miles then read a paper entitled

A CASE OF DILATATION OF THE STOMACH, DEPENDENT UPON CONTRACTION OF THE PYLORUS.

in which tetany of a typical character occurred, speedily ending in death. He could find nothing in the vomited matter to account for it.

Dr. J. W. Chambers submitted a paper on

CYSTIC TUMOR OF THE LOWER JAW,

which was read by title.

Dr. George J. Preston reported a case of

TUMOR OF THE CEREBELLUM

pressing on the middle lobe.

In the

DISCUSSION

which followed,

Dr. J. D. Blake, referring to Dr. Welch's paper, asked how the poison could be transmitted by the nerves alone. If injection into the blood does not kill, but makes the animal proof against future attacks, why not inject the substance directly into the blood of man to prevent hydrophobia?

Dr. W. C. Van Bibber said if the temperature stated would kill the organism of rabies, this should give a valuable idea on the treatment.

Dr. William H. Welch remarked in conclusion, that many facts about rabies are known which could not be explained. It was not understood how the virus was transmitted along the nerves, but the fact remains, and still further, this did not seem to disturb the function of the nerve. It might extend along the lymph-vessels of the nerves; we know little of the composition of the lymph. He did not mean to be understood as saying that the virus did not extend through the blood, lymphatics, etc., but that we have no evidence of this. In reply to Dr. Van Bibber, he said that the method of cauterization is a good one, but it does not prevent rabies. The virus must penetrate into the nerve to be transmitted by it, and the chance of piercing a nerve in the skin by puncture is very small.

SECTION ON PSYCHOLOGY AND MEDICAL JURISPRUDENCE.

Richard Gundry, M.D., Chairman.

The Chairman read a paper on

THE RELATION OF THE PHYSICIAN TO THE INSANE,

and spoke particularly of the frequency of monomania, and of the difficulties of recognizing true insanity by the unskilled; as a person may be entirely sane on many subjects, and insane only on a few. A person totally insane has no recollection of a deed committed, while a person partly insane may remember the past partly.

SECTION ON MICROSCOPY, MICRO-CHEMISTRY, AND SPECIAL ANALYSIS.

Christopher Johnston, Sr., M.D., Chairman.

The Chairman read a report on

THE APPLICATION OF SPECTROSCOPY TO THE STUDY OF THE BLOOD, AND THE AMERICAN OBJECTIVE AS COMPARED WITH THE GERMAN.

SECTION ON OPHTHALMOLOGY, OTOLOGY, AND LARYNGOLOGY.

Dr. H. C. McSherry read a paper on

CURABILITY OF LARYNGEAL PHTHISIS;

and Dr. A. Friedenwald one on

DISTURBED EQUILIBRIUM OF THE MUSCLES OF THE EYE IN THE CAUSATION OF NERVOUS DISEASES.

Volunteer papers were then read by Dr. S. J. Fort, on

APHASIA DUE TO SHOCK OF SEVERE CONSECUTIVE EPILEPTIC SPASMS;

by Dr. John C. Hemmeter, on

RECENT INVESTIGATIONS ON THE PHYSIOLOGICAL ACTIVITY OF ALCOHOL,

which was the result of three years of carefully conducted work in the biological laboratory of Johns Hopkins University; by Dr. A. K. Bond, on

ANEURISM OF THE ABDOMINAL AORTA BURSTING INTO THE PLEURAL CAVITY;

and by Dr. George H. Rohé, on

A PAINLESS AND EFFICIENT METHOD OF EXTIRPATING VASCULAR AND PIGMENTED NÆVI,

with exhibition of photographs.

OFFICERS ELECTED.

The following officers were elected for 1889-90:

President—Dr. A. Friedenwald; *Vice Presidents*—Drs. T. A. Ashby and Charles G. W. Macgill; *Recording Secretary*—Dr. G. Lane Taneyhill; *Assistant Secretary*—Dr. Robert T. Wilson; *Corresponding Secretary*—Dr. Joseph T. Smith; *Reporting Secretary*—Dr. William B. Canfield; *Treasurer*—Dr. W. F. A. Kemp.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

AN INTERESTING CASE OF ANEURISM—STEAM-JETS IN COTTON-FACTORIES AS A CAUSE OF DISEASE—TWO MEDICAL VETERANS—A DISTINGUISHED PARISH DOCTOR—THE RATE OF INCREASE OF THE PROFESSION—THE NEW LUNACY BILL—LATERAL CURVATURE OF THE SPINE, ITS CAUSATION AND PATHOLOGY—ABDOMINAL NEPHRECTOMY—SYPHILITIC FEVER NINE YEARS AFTER INFECTION—A PENNY-A-WEEK COLLECTION AMONG WORKMEN FOR THE BENEFIT OF HOSPITALS—A ROYAL COMMISSION ON VACCINATION.

London, April 9, 1889.

At the last meeting of the Pathological Society Dr. Mott read a paper in which he detailed the history of a case of some interest. The patient was a boy aged thirteen who was admitted into Charing Cross Hospital for well-marked aortic disease. There was some enlargement of the liver, pain and tenderness over the spleen, and the urine contained a trace of albumen. While in hospital the boy had frequent attacks of pyrexia, the temperature rising to 102° and 103° F., and the case was diagnosed as one of infective endocarditis, with extensive vegetations of the aortic valves. Severe pain occurred suddenly one day in the right hand, which was also numbed. No pulse could be felt in the ulnar artery at the wrist, and a little later the radial pulse also disappeared. Embolism of the ulnar and brachial arteries was diagnosed. No pulsating tumor ensued. The patient died three months later, and at the necropsy the heart was found enlarged, its tissue undergoing fatty degeneration, and there was extensive disease of the aortic valves, the cusps being covered with large calcareous vegetations. Similar vegetations (but smaller and more recent) were present on the anterior cusp of the mitral valve and the adjacent endocardium. There were many old infarcts in the spleen and left kidney. There was an aneurism of the ulnar artery just beyond the interosseous branch, and an aneurismal dilatation of the brachial artery at the lower border of the tendon of the teres major. Microscopical examination showed that the inner coat of the vessel was destroyed at the seat of the aneurism, and the middle and external

coats were separated by leucocytes. Dr. Mott remarked that the case was of interest as affording an undoubted example of aneurism following embolism. It was one of calcified aortic valves like that described by Ponfick, but it was also probably infective—hence the ulceration and the softening of the vessel-wall, and the production of aneurism. There was a striking similarity between the condition of the vessel-walls in this case and that of a case of ulceration and secondary hæmorrhage of the popliteal artery after ligature, the wound having become septic.

Among the recognized causes of pulmonary disease one of the most important is the inhalation of dust of various kinds, and the extensive mortality in certain occupations has been conclusively proved to be due to this cause. We now learn, on the authority of Dr. Arlidge, in his recent "Milroy Lectures," at the College of Physicians, that another danger has in recent years been added to those affecting one class of workers in dusty occupations, viz., operatives in cotton factories. To produce some qualities of fabric now in considerable demand for exportation, a certain degree of moisture is necessary, and to supply this it has become the practice to inject jets of steam into the weaving sheds. Not only the materials in process of manufacture, however, but the weavers themselves are covered with moisture from the steam thus introduced, and as a consequence, impaired digestion, vertigo, rheumatism, and respiratory disorders are unduly prevalent among them. The matter is one urgently needing legislative interference.

Two medical veterans have recently entered into rest, viz.: Dr. C. J. B. Williams, and Dr. Joseph Rogers. Their life-work lay in very different directions. Dr. Williams had sufficient advantages of fortune to enable him to commence practice at the West End as a consulting physician. He had previously, after graduation at Edinburgh, studied a year in Paris, where he was a pupil of Laennec. On returning to this country, therefore, he became one of the pioneers of auscultation, among his contemporaries and fellow-workers in the same field being Archibald Billing, Thomas Davies, and many others long since deceased. Dr. Williams was one of the founders of the Brompton Consumption Hospital, to which institution his son (Dr. Theodore Williams) is now senior physician. He enjoyed for many years a large and lucrative practice in diseases of the chest.

From a consulting physician to a parish doctor is rather a long stride, but the late Dr. Joseph Rogers, probably, did as useful work in his day, in the latter capacity, as was done by Dr. Williams in his more exalted sphere. Dr. Rogers spent almost the whole of his professional life in the Poor-law Service, and was recently President of the Poor-law Medical Officers' Association. He was during many years indefatigable in his efforts to improve the position of medical officers in the Poor-law Service, and it is to his exertions that many of the most useful reforms are due.

A survey of the figures contained in the new volume of the *Medical Register* is calculated to "give us pause." It appears that no fewer than 1,184 new names were registered last year, while only 511 medical men died. The net gain to the ranks of the profession was, therefore, 673. If we go back to the statistics of former years, we find from them that the same rate of increase has been going on for years. What is to become of them all, and from whence are sufficient patients to be obtained to support this ever-increasing army of practitioners?

The New Lunacy Bill still lags in Parliament. To any medical mind one of the most objectionable clauses is that which allows a patient to be interviewed by a magistrate, who may then veto his admission to an asylum without assigning any reason whatever! The only way in which this clause could be rendered unobjectionable would be by delegating the duty to medical magistrates, who should, of course, be debarred from practising otherwise, but receive a salary for their services.

LONDON, April 15, 1889.

The "Causation and Pathology of the More Common Forms of Lateral Spinal Curvature" constituted the subject of a somewhat elaborate paper by Mr. Arbuthnot Lane, read before the Medical and Chirurgical Society at their last meeting. The author endeavored to show that most cases of lateral curvature were the result (1) of the fixation and (2) of the exaggeration of a normal and physiological attitude. In the case of the labor curves, the attitude, which was fixed and exaggerated, was one of activity; in scoliosis it was one of rest. After discussing the structure of the vertebral column, and the influences which determined the form of its curves in a vertical antero-posterior plane, Mr. Lane proceeded to consider the manner in which the characters of these curves might be modified in the same plane by labor, symmetrical postures of rest, and by disease of the column itself. In symmetrical flexion of the column, though the fibro-cartilages were rendered more or less wedge-shaped (the thicker part being directed backward), yet the whole of the fibro-cartilaginous disk was compressed, owing to the resistance offered by the spinous processes and their connecting ligaments. Should flexion be habitually maintained beyond the physiological or recoverable period, the whole of the fibro-cartilage was diminished in depth, though this was much more marked in front of than behind the transverse axis of rotation. The column was no longer able to resume its normal curves. Supposing the column to be vertical, to consist only of vertebræ and intervening disks of cartilage unconnected with the other portions of the body, and situated upon a horizontally placed sacral facet; if the upper end of the column were made to remain in a vertical antero-posterior plane, any lateral inclination of the sacral facet must be followed by a rotation of each body around an antero-posterior axis so as to form a long single lateral curve. The segment of fibro-cartilage corresponding to the concavity of the curve would be compressed, while that corresponding to its convexity would be elongated, since in the formation of this lateral curve there was no such resistance offered to its development as was afforded in flexion by the spinous processes and connecting ligaments. In such a hypothetical condition the line formed by the apices of the spinous processes would deviate from the middle line to the same extent as that formed by the centres of the bodies of the vertebræ. Should that easy erect posture be assumed in which almost the whole of the weight of the body was supported upon one leg, the sacral facet was inclined considerably to one side, so that we had present both a flexion of the column produced by a rotation of the bodies of the vertebræ around a transverse axis, and a flexion produced by their rotation around an antero-posterior axis. This resulted practically in the rotation of each body around an axis in a horizontal plane which occupied a position between these, its direction being obliquely forward and outward. As a consequence of this, the antero-lateral segment of fibro-cartilage corresponding to the concavities of the two curves was exposed to much pressure, while the opposite segment was placed on the stretch. This condition of the fibro-cartilage became permanent when the attitude in question was too prolonged. Later still, as the deformity became exaggerated, the bones underwent corresponding changes in form. In this case, owing to the oblique direction of the axis of rotation, the spinous processes formed by no means such a marked curve as did the bodies of the vertebræ. The same combination of transverse and antero-posterior rotation was frequently present in the sedentary attitudes of rest.

Mr. William Adams remarked that Mr. Lane had laid too much stress on the mechanical causes of the curvature. The predisposing causes must not be forgotten. He was inclined to divide cases of scoliosis into three classes: 1, Those occurring in children under twelve years of age, which were mostly due to the strumous and rachitic diatheses; 2, those in children between twelve and sixteen,

which were due to hereditary, constitutional, or local causes; 3, cases in children over sixteen, in which local causes predominated. Other theories, such as that of muscular contraction by Guérin and of rotation by Dodd, were still open to discussion. The spine never curved laterally, but the bodies of the vertebræ rotated horizontally. Why did the bodies of the vertebræ rotate? He believed the mechanical theory was the correct one. The oblique articulating processes allowed of lateral movement in the cervical region, but of very little in the dorsal region, and of practically none in the lumbar portion of the spine. He accepted Mr. Lane's account of the changes which occurred in the intervertebral disks, and claimed that the articulating processes accommodated themselves to the changes; the result being that the bony structures had to undergo changes corresponding with those of the cartilages.

Mr. Barwell observed that the term "rotation" had been hitherto used to denote that motion by which the anterior faces of the bodies of the vertebræ looked toward the convexity of the curve, while the spines looked toward the concavity; its use for any other conditions was to be avoided. In many cases in young children a simple curve of the whole column was met with. The rotation of the sacrum or obliquity of the pelvis did produce to some degree the loin curve, but this was compensated for by the opposite direction of the facet on the inferior surface of the last lumbar vertebræ. The normal position of the lumbar spine in the sitting posture was a curve with the concavity forward. Mr. Lane had attempted to account for all lateral curves by the action of the balance, but this could not explain those curves which were primarily dorsal, and which remained confined to the dorsal region till a comparatively late period. He was not certain that confirmed lateral curvature was incurable, but thought much improvement could be effected if a pertinent apparatus were applied and muscular action encouraged.

Mr. Lane, in reply, said he had been able to satisfy himself that these curves were simply the fixation and exaggeration of normal attitudes. In children these were the attitudes of rest (resting curves), in adults those of activity (labor curves.)

Mr. Knowsley Thornton then read a paper on "Abdominal Nephrectomy," in which he gave an account of twenty-five cases. Only five of these had terminated fatally, but two of the deaths were not properly to be counted against abdominal nephrectomy, one being due to the perforation of the right pleura by a malignant tumor, and the other to hemiplegia, which was brought on by the anæsthesia rather than by the operation. Mr. Thornton thought nephrectomy was superior to nephrotomy and drainage for the cure of hydronephrosis. He condemned incision of a suppurating kidney as a preliminary to nephrectomy, but strongly advocated the removal of the kidney without any puncture during operation whenever the size permitted. Langenbuch's incision was the best. Mr. Thornton said his practice of pinning out the ureter had led to no trouble, and he considered it the chief factor in securing the success attained. He thought it would prove a measure of safety even in lumbar nephrectomy.

Mr. Clement Lucas said a great point was to ascertain that the other kidney was healthy, and, if the amount of urea secreted was less than half the normal quantity, the operation must necessarily be a very serious one. In kidneys with hydronephrosis he was sure nephrectomy was right and nephrotomy wrong; if the kidney refilled after one aspiration, it should be removed. He questioned the safety of removing suppurating kidneys through the peritoneum. The ureter had never given him the least trouble, and he had not once regretted dropping it back after simple ligature.

At a recent meeting of the Medical Society of London Dr. Sidney Phillips read a paper in which he described a case of syphilitic fever with somewhat unusual features. The fever occurred nine years after infection, lasted eight months, and resembled that of tertian ague. The attacks recurred every day at first, and then every other day. They were accompanied by shivering and sweating. Ten days after the admission of the patient to hospital quinine was administered to her in two-grain doses three times a day, and then five grains were given before the expected pyrexial attack. This checked the fever for a time, but afterward failed to do so, although the dose was increased. Iodide of potassium and mercury, however, when given, not only reduced the temperature, but relieved the headache and vomiting which had been present. The question was raised whether the pyrexia was associated with a local syphilitic lesion, but no localizing evidence could be obtained. Erythema nodosum was present, and, apart from syphilis, it was rare to find this accompanied by fever. Similar cases of syphilitic fever had been described by John Hunter and Fournier, but none so late as the ninth year after infection.

It is proposed to supplement the collections made on "Hospital Sunday" and "Hospital Saturday" by instituting a "penny-a-week" collection in workshops. It is estimated that a sum equal to half a million dollars may thus be raised.

The Government has consented to appoint a Royal Commission to inquire into the working of the Vaccination Acts.

WANTS TO KNOW IF CHRONIC NASO-PHARYNGEAL CATARRH CAN BE CURED.

To the Editor of The Medical Record.

Sir: We see occasionally, in fact frequently, in the medical journals the mention of one or another drug or remedy as useful in chronic nasal, naso-pharyngeal, and pharyngeal catarrh.

Now, can any one suggest an effective treatment for a class of catarrhs of which I shall speak? I have turned to the pages of treatises on diseases of the nose and pharynx, and read up in the medical journals on the subject till I'm aweary, and yet I find no comfort. I do not refer to "catarrh" in the "phlegmatic" or "bilious" type of patient; anybody can cure that, or come as near curing it as the climate will permit. But I allude to a class of cases that forms a very large part of the number seen by every physician, *i.e.*, catarrh in subjects of the "nervous" and "sanguino-nervous" temperaments.

Stimulating treatment, so far as my experience goes, is worse than no treatment, no matter what may be the character of the astringent used. Sedative treatment is delusive at the beginning, but soon displays its true value, for the last state of that case is worse than the first. Persons suffering from this kind of catarrh rarely ever hawk out the thick, opaque mucus, but eject a thin, glairy, clear mucus from much swollen mucous membranes, and suffer fully as much discomfort from the necessity of frequent expectoration and the stuffy feeling as do those who have the other form of the disease.

I am a sufferer myself from this form of catarrh, and my personal experience for years, with self-treatment and treatment at the hands of others, has borne out the views stated above in regard to treatment.

I am aware that communications of this character appear more in place in some of the numerous "Physicians' Own Review" monthlies; but if others have the same experience that I do, why should not the matter appear in a journal of the character of The Record? If my experience is unusual, there must still be a number who have had ill-success in the same line, and a little honest airing of the subject in your columns by some experienced rhino-pharyngo-laryngologist might help some of us to gain a better knowledge as to what can and what cannot be done.

It were an end to be desired to gain a position where we could, without fear and trembling, view the approach of one of these fair-haired, "nervous" victims of naso-pharyngeal catarrh, even as we now look on one of the dark, phlegmatic class of sufferers from the same disease,

as the prospective field of conflict between disease and "scientific" medicine, in which the latter will surely gain a glorious victory.

Can you come over into Macedonia and help us, or has the work not prospered enough yet in the coasts of Asia to send out help to any country? G. P. H.

A PLEA FOR A MORE ASEPTIC SURGICAL POCKET CASE.

To the Editor of The Medical Record.

SIR: The pocket-case of instruments is, of course, indispensable, but often the results of good surgery are defeated because it is dirty. Its instruments are called out in emergencies when there is rarely time to cleanse or disinfect them before using. Moreover, being generally employed for minor surgery, not so much thought is bestowed upon the necessity for their cleanliness as is given to instruments used for large and definitely timed operations. But their very folding shape and the nature of their employment especially adapts them to becoming foul, difficult to cleanse, and liable to convey sepsis. The clasp bistoury, after use, is too often simply dipped in water and hurriedly wiped, and even after it has been completely bathed in pus, which too often is never properly cleansed from the *interior* of its mischievous handle. In the hurry of selecting a needle from a needle-book, or piece of leather, how often is a bloody finger-mark left behind and several needles inevitably soiled. How often do we see silk carried in the instrument-case, and how often this is dirty. The very make-up and upholstery of the common case is a source of danger. Made of red or black leather, a soiled finger-touch is rarely visible or washed away. Lined with velvet or with silk, it can never be suitably cleansed. The insertion of an aseptic instrument into one of its soiled pockets will surely infect it and render surgical work with it in the future fraught with danger.

The pocket-case in common use has not kept pace with the rules and the requirements of modern surgery. Its clasping instruments—difficult with the greatest care to cleanse—should be replaced by those of a more aseptic pattern. Its upholstery with silk or plush should be abolished. There should be a means of carrying catgut in it properly prepared and guarded against pollution. More care should be bestowed upon the disinfection of the pocket-case, for although the instruments be placed in antiseptic solutions before and after use, yet they will always be dangerous if carried in a filthy case. As it exists to-day, it is a source of danger and too often a nuisance.

JOHN HAMMOND BRADSHAW, M.D.

ORANGE, N. J.

ANOTHER SIGN OF INTESTINAL PERFORATION.

To the Editor of The Medical Record.

SIR: The ingenious device of Dr. Senn has directed the attention of the profession very strongly to the possibility of making a diagnosis of intestinal perforation, in perforating wounds of the abdomen, during the life of the patient. I wish merely to record a post-mortem sign, which in an experience of a number of years in the mortuary of the Cincinnati Hospital has invariably been found, and of which I have seen no mention in the books. The change is found in the liver especially, and, to a less degree, in the spleen, and consists in a peculiar grayish-blue discoloration of the whole or nearly the whole surface of these organs. The alteration in color is quite characteristic, and is found in only one other condition, viz., chronic malarial pigmentation. From this latter condition the discoloration of intestinal perforation is readily differentiated by the fact that it is always quite superficial, rarely affecting the gland substance to a depth of more than one-sixty-fourth of an inch below the capsule; while in the case of malarial pigmentation the change is pretty uniformly disseminated throughout the entire gland. An observation of upward of thirty cases of intestinal perforation due to penetrating wounds has pretty well established the constancy of its occurrence. The discoloration becomes somewhat deeper with the length of time that has elapsed since the receipt of the injury; yet it is well defined when death occurs within the first twelve hours. The cause of this change in color is probably to be sought in the action of the sulphuretted hydrogen on the hæmoglobin, which, with the stagnation of the circulation in the superficial layers, due to the accompanying peritonitis, leads to a precipitation of a dark pigment (the sulphide of iron?). In the malarial cachexia large, irregular, granular accumulations of pigment are found deposited between the individual cells; in the case of the penetrating wound there is a very faintly granular deposit, which it is not always possible to differentiate from the ordinary bile-pigment.

This sign cannot of course compare in importance with the hydrogen test; yet there are cases in which the latter may for one reason or another not be applicable, or fail. In such cases, if an exploratory laparotomy be determined upon, it can add but little to the dangers of the patient to extend the incision upward sufficiently to expose the free margin of the liver for inspection. Should the discoloration be found and the history be that of a penetrating wound of the abdomen, there is almost positive proof of perforation. (I have in six hundred post-mortems met with but two cases of malarial pigmentation so decided as to give the slaty color—and it would be a rare coincidence that would bring us a patient suffering from an old malarial cachexia and a recent perforating abdominal wound.)

With this sign present, it would then become incumbent upon the surgeon to seek for the opening in the bowel. It is well-known that the reparative efforts of nature quickly surround the perforation with adhesive lymph, which tends to glue to the injured part neighboring coils of the intestine; and such adhesions might otherwise obstruct the search for the point of escape of gas and fecal matter.

It is not with any view of attaching great clinical importance to this alteration that I send you these lines; but rather that the attention of pathologists may be called to the subject, and because there is, as suggested, a possibility, however remote, that it may at some time prove of service *in vivo*. The liver is the organ most affected, and the change is more readily recognized here because the normal color of the splenic capsule frequently gives us a shade of slate color.

Very respectfully, JOSEPH EICHBERG, M.D.

P. S.—In answer to an objection that will probably be raised, that there is no clinical history of the observation of any such change during life, I will admit that this is true; yet, on two separate occasions when the autopsy was made two and one-half and three hours, respectively, after death, the discoloration was so pronounced and had penetrated the capsule to such a depth as to leave little doubt that it was an ante-mortem occurrence. I cannot say positively how soon the discoloration begins; but it has been found in cases where not more than twelve hours have elapsed from the infliction of the wound to the fatal termination.

A UNIQUE EXAMINATION FOR HOSPITAL APPOINTMENT.

To the Editor of The Medical Record.

SIR: It is customary for the management of the Bellevue Hospital to issue notice that on certain dates a committee will be in session for the examination of candidates who seek places upon the hospital staff. These announcements generally reach the students of the various medical colleges in the country. They turn eagerly to compete for

positions upon this hospital's staff, not only because of the standing of the Bellevue medical college connected with the hospital, the fame of individual members of its faculty, and their operations in the hospital, but because other and exceptional advantages are attendant upon such work. The notices, or announcements, must, therefore, always bring into competition a number of the ablest of the more recent graduates in medicine. Those who come—at least those who come from afar—naturally and reasonably look for an examination in keeping with the dignity of the institutions, and the importance and responsibility of the positions under competition.

On March 26th last, a number of such men presented themselves at the hospital at the hour appointed for examination for the Fourth Division. After standing corralled in the rotunda for half an hour, they were given seats in an adjoining room. Shortly after they were summoned to the rotunda corral again, and left standing to the end of the examination—nearly three hours. They were called in turn before a member of the examining committee, and afterward returned to the rotunda to await the call before the next examiner. Every man on returning mingled with his friends. It is needless to add that he brought word of the character of the examination. Early in the contest it became known that some of the examiners were plying repeatedly the same questions —a matter beyond cavil had the contestants been kept apart. Happy was the man, therefore, who had "friends gone before." Such an one possessed a double advantage—what his friends had to report, and what the text-book, which he immediately consulted, had to say on the subject. And thrice and four times happy was he who was invited upstairs—to consult the authorities!

There were two kinds of examiners on the committee, professors from the New York colleges, and practitioners pure and simple. The questions of the former were invariably *essential* and to the point; those of the latter were often non-essential "catch questions," and one examiner, pregnant with his own ideas, often overrode well-accredited authors. For examples: One applicant was asked what he would do in case of stone in the bladder. "Crush it, and wash out the bladder," he answered. But he was met by the rebuke, "Under no circumstances wash it out—let it alone." On venturing the opinion that a stone in the pelvis of the kidney might be removed by cutting, he was ordered never to cut into the pelvis of the kidney. By another man, atony of the bladder and congestive stricture were given as causes for retention of the urine. This was met with contempt galore—"What do *you* know about congestive stricture and atony of the bladder?" Still another man lost his rating because he neglected to mention that fish-bones in the rectum are the cause of *fistula in ano*.

The question of the derivation of nephrectomy (commensurate in importance with another profound interrogatory of a previous examination as to the number of ova in the segment of a tape-worm, commented on in THE MEDICAL RECORD in '86) cost another man his head. Misfortune overtook another who came from a distance, and consequently pleaded ignorance as to what the invaginated catheter might be. The judgment of men learned in medicine must be at one upon the foregoing examples. Otherwise the examination was marred as to its fairness by the failure of applicants to appreciate the idiosyncrasies of some of the examiners. The gentleman who presided over catch questions, and who stated before the examination that questions would be asked that nobody could answer, and afterward admitted that such had been asked and nonessential details exacted only "for the fun of it," might have made Sitting Bull envious with the many scalps at his belt. Still a third element, peculiarly unfair, was the omission of any examination whatever in Practice, Obstetrics, and Gynecology.

Such were some of the phases of the examination. Was it in keeping with what the announcement would lead one to expect? The candidates had been preparing themselves for years in hopes of filling important positions. They were for the most part mature men, educated and gently bred, many of them worn with long and exhausting study. Was it considerate or decent treatment to oblige them to stand for hours on the cold marble floor of a hospital rotunda, exposed to drafts and colds to which the ordinary boss would not subject his laboring men? By what sort of foresight did the examiner propound the same question to men in turn?—the first to be examined retiring to post his friend upon the subject. Could the man coming from a distant college, with no friend in the arena, hope to win? Is it any wonder that ten *fratres in urbe* out of twenty-three competitors stood perfect on a most difficult question? Is it a wonder that the first were last and the last first? that the patient waiter was no loser? that the rank of the last men went up with the rapidity of Jonah's gourd? Who is so idle as to suppose that, where four are to be chosen, a man would not post his friend, and innocently tell the questions asked and his answers thereto?

Again, can it be said that an examination is conducted with fairness when the competitor's answers, according to a standard text-book, are discredited because that individual examiner holds an adverse opinion? It is hardly known whether the adverse opinion is in print. And is a man, reputed to be erratic, impulsive, falling short of considerate courtesy, and easily prejudiced, the best person to hold an examiner's position and deal fairly?

Further, catch questions cannot give an examiner the best inkling of the applicant's knowledge. Is it fair or dignified to press an applicant with such "for the fun of it?"

Again, it goes without saying that an applicant should be carefully examined in those branches of which he makes the most use in the position he seeks to fill. Any place in Bellevue Hospital demands such examinations. It has been noted that practice, obstetrics, and gynecology were omitted. This omission worked injustice in the examination, in that men best qualified in the above-named branches fell short in the general average. They lacked the advantage they might have gained if the examinations had been carried out roundly and completely. And what can be said in defence of the omission of so important a subject as the practice of medicine?

It may be added, in consideration of the rewards of the contest, that the fact of a man's fitness to serve is, outside of the examination, never gone into. "What have you ever done to develop executive abilities? What qualifications have you to recommend you outside of your book learning?" is never asked.

Is an examination possessing the unique features of this one as it decently should be? Is it consistent with what an applicant had been led to expect? Is the medical fraternity of New York City cognizant of its scope? Is it what the people should expect and demand?

In the event of the appointment of a State Board of Medical Examiners, the question has been raised whether such a body shall be made up from the medical professors of the State or from practitioners. The question in all its fulness applies to boards of examiners for hospitals. A study of the details of the late Bellevue examination might give arguments upon one side. But why should not the hospital examinations for Bellevue possess in the future the merit of courtesy—and also fairness and thoroughness?

J. WARREN ACHORN, A.M., M.D.

BROOKLYN CITY HOSPITAL, May 1, 1889.

THE AFTER-TASTE OF THE SALICYLATES.—When salicylic acid or salicylate of soda is given in solution, the unpleasant after-taste often causes nausea and vomiting. This can frequently be averted, says the *Omaha Clinic*, by placing a small quantity of table-salt upon the tongue immediately before the administration of these preparations.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 5 to May 11, 1889.

AINSWORTH, F. C., Captain and Assistant Surgeon. By direction of the Acting Secretary of War, will proceed to Albany, N. Y., on business connected with the Medical Department. Par. 7, S. O. 105, A. G. O., May 7, 1889.

APPEL, D. M., Captain and Assistant Surgeon. Relieved from duty at Fort Sill, I. T., and ordered to Fort Bliss, Tex. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

COWDREY, S. G., Captain and Assistant Surgeon. Relieved from duty at Fort Bliss, Tex., and ordered to Fort Marcy, N. M. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

FINLEY, JAMES A., Captain and Assistant Surgeon. Relieved from duty at Fort Assinniboin, M. T., and ordered to Fort Totten, Dak. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

DE LOFFNE, AUG. A., Captain and Assistant Surgeon. Relieved from duty at Fort Totten, Dak., and ordered to Columbus Barracks, O. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

TAYLOR, B. D., Captain and Assistant Surgeon. Relieved from duty at Columbus Barracks, O., and ordered to Fort Sill, I. T. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

BROWN, PAUL R., Captain and Assistant Surgeon. By direction of the Secretary of War, is relieved from further duty in the Department of the Platte, and will proceed to Fort Thomas, Ariz., and report in person to the commanding officer of that post for duty, and by letter to the commanding officer, Department of Arizona. Par. 10, S. O. 105, A. G. O., May 7, 1889.

FISHER, WALTER W. R., Captain and Assistant Surgeon. Granted leave of absence for one month. Par. 1, S. O. 30, Headquarters Department of California, San Francisco, Cal., April 27, 1889.

KENDALL, WILLIAM P., First Lieutenant and Assistant Surgeon. By direction of the Acting Secretary of War, will be relieved from duty in the Department of California after he shall have complied with the requirements of Par. 2, S. O. 29, April 24, 1889, from these headquarters, and will then proceed to Fort D. A. Russell, Wyo., for duty at that station. Par. 28, S. O. 104, A. G. O., May 6, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending May 11, 1889.

BEARDSLEY, GROVE S., Medical Inspector. Detached from the Brooklyn, proceed home, and wait orders.

LOVERING, P. A., Passed Assistant Surgeon. Detached from the Brooklyn, proceed home, and wait orders.

NORTON, OLIVER D., Assistant Surgeon. Detached from the Brooklyn, proceed home, and wait orders.

HAWKE, J. A., Surgeon. Detached from the Essex, proceed home, and wait orders.

STOKES, C. F., Assistant Surgeon. Detached from the Minnesota and to the Iroquois.

BRANSFORD, JOHN F., Surgeon. Orders to the Iroquois revoked, resignation accepted to take effect May 4, 1890, with leave of absence granted to that date, with permission to leave the United States.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending May 11, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	6	2
Scarlet fever	300	39
Cerebro-spinal meningitis	3	3
Measles	169	9
Diphtheria	165	49
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

TRAUMATIC SUBDURAL ABSCESS OF THE BRAIN.—From a study of this subject, published in *The Annals of Surgery*, Sir William Stokes has formulated the following propositions: 1. That after the primary symptoms of cerebral traumatism have subsided there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess-formation whatever. 2. That their appearance is as a rule sudden, and, if uninterfered with, they run a rapidly fatal course. 3. That the occurrence of pus-production resulting from cerebral traumatisms is not incompatible with a perfectly apyrexial condition. 4. That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningeal or encephalic inflammation. 5. That both as regards color and consistence there is great variety in the contents of cerebral abscess-cavities, and that, as shown in Wilm's case, published by Rose, of Berlin, they may become transparent. 6. That antisepticism has largely diminished the risks of the operation of trephining. 7. That, having regard to the great mortality of cases of cerebral abscess when uninterfered with, viz., from ninety to one hundred per cent., the operation is indicated even when the patient is *in extremis*. 8. That in the case where the trephine-opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed. 9. That by the adoption of this measure the necessity for multiple trephine-openings can be largely obviated. 10. That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation. 11. That drainage is desirable in the after-treatment of such cases. 12. That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required.

HEPATIC SURGERY.—The London correspondent of the *Journal of the American Medical Association* writes that at the Medical Society of London Mr. I. Knowsley Thornton gave some notes of his most recent operations in hepatic surgery. The first two were cases of abscess in connection with perforation of the gall-bladder, presumably by gall-stones, though the stones were not found. The third case was one of cholecystotomy, the gall bladder being removed and the stones left in the common duct, from which afterward they were expelled, there being considerable disturbance as they passed through the ileo-cæcal valve. The fourth case was one of ordinary cholecystotomy, the gall-bladder being sutured into the parietal opening and drained. The fifth was one of hepatotomy for hydatids of the left lobe of the liver. The last case was one of abscess in connection with perforation of the gall-bladder, stones being found both in the abscess sac and in the gall-bladder and cystic duct, one hundred in all. Mr. Thornton drew attention to the danger of waiting when there were symptoms of impacted gall-stones, on the advisability of free incision

and drainage in preference to aspiration, on hydatids, on cholecystectomy in place of cholecystotomy, on the function of the gall-bladder, and upon the irritant action of bile on healing wounds. With regard to the two first cases he brought forward, where the stones escaped from the gall-bladder and became encysted, the first tube took about seven or eight weeks to heal up, and was at present quite well.

ACUPUNCTURE IN ENLARGEMENT OF THE SPLEEN.—At the Congress of the Italian Society of Medicine, held at Rome some months ago, Dr. Feletti related two cases of chronic malarial enlargement of the spleen which he had treated successfully by acupuncture. He used steel needles, such as are used for the electro-puncture of aneurisms. Having first carefully disinfected the needle, he plunged it into the substance of the spleen, leaving it there just long enough to be sure that it was in the right place. The procedure is almost painless. In one of his cases Dr. Feletti had an opportunity of examining the organ after death, which occurred (from tuberculosis) a fortnight after the last puncture. With the naked eye small brown spots could be seen in the spleen at points corresponding to the punctures. Microscopic sections showed a roughly triangular area with its base toward the capsule, which at that point was broken; this area was occupied by young connective tissue, together with the remains of a blood-clot. In the discussion which took place on Dr. Feletti's paper, Dr. Fazio spoke highly of the results of parenchymatous injections of quinine in similar cases, which combined the mechanical effects of puncture with the medicinal action of the drug.—*British Medical Journal.*

THYMOL IN TYPHOID FEVER.—At the Congress of Medicine, held in Rome last October, Dr. Testi related his experience of thymol in more than one hundred and fifty cases of typhoid fever treated in the Hospital of Faenza. The results were most satisfactory. The temperature was reduced, not, he maintained, by the withdrawal of heat from the body, as is the case with ordinary antipyretics, but by moderating its production. The antiseptic action of the drug was also marked; it diminished tympanites, checked diarrhœa, and notably lessened the putrefactive products usually found in the excreta. Dr. Testi also states that on microscopic examination he found a remarkable diminution in the number of mucus-corpuscles, epithelial *débris*, and parasitic elements (especially granular) in the stools. The drug has also a marked effect in reducing the excretion of urea, and as it increases the blood-pressure it has no injurious influence on the action of the heart. Dr. Testi strongly recommends thymol in typhoid fever as mitigating the severity of the disease and preventing complications.—*British Medical Journal.*

MOVEMENTS OF THE STOMACH.—Physiologists have long taught the existence of certain peristaltic movements of the stomach which go on during digestion, and have for their object to agitate the alimentary mass and impregnate it with gastric juice, as well as to expel the chyme. Leven even affirms that these movements go on during fasting, though they are more active during the digestive process. Much, moreover, has been learned of late years with respect to the effects of atony of the muscular coat, —an atony the advanced stage of which constitutes gastrectasia, with its formidable array of dyspeptic symptoms. The older physiologists taught that the chemical activity of the stomach is in intimate correlation with the muscular activity, the secretion of gastric juice being the more abundant the more completely all parts of the stomach are brought in contact with the alimentary bolus, the latter reflexly stimulating this secretion. This, as a general rule, is undoubtedly true, being in accordance both with known laws and careful observations, such as those of Beaumont on Alexis St. Martin. It is true that some recent physiologists have inverted the process, and claimed that the energy of the movements of the stomach is closely related to the richness in acid of its contents. To test this, Klemperer, who recently addressed the Society of Internal Medicine of Berlin "On the Motor Functions of the Stomach," has experimented with alkalies, as magnesia, a sufficient quantity of which was introduced into the stomach to neutralize every trace of acid; in these conditions the movements of that organ were found just as energetic as ever. These were, however, healthy subjects, and it would be interesting to note in such subjects the effects of a continuance of these experiments. Certain it is that in another series of experiments, on thirteen patients affected with gastric catarrh, Klemperer noticed that with a diminution of hydrochloric acid and an augmentation of mucus there was a notable diminution in the movements of the stomach. It is probable that the view of Ewald expressed at the same meeting is the correct one, that all the functions of the stomach—secretory, motor, absorbent—constitute a unity or solidarity; that no one of these functions taken separately has the principal part either in the physiological or pathological processes of the organ, while derangement of any one of them sooner or later breaks the harmony and results in disease.

WHISTLING SPEECH.—At a meeting of the Berlin Anthropological Society, Lieutenant Quedenfeldt, a German officer who has lived on Gomero Island, one of the Canary group, described a whistling language which is used by the inhabitants. The language does not consist of any arbitrary series of signals or sounds. It is described as ordinary speech translated into articulate whistling, each syllable having its own appropriate tone. The Gomero uses both fingers and lips when whistling, and Lieutenant Quedenfeldt asserts that he can carry on a conversation with a neighbor a mile off, who perfectly understands all he is saying. The practice is confined to Gomero Island, and is quite unknown to the other islands of the archipelago. The adoption of the whistling language is said to be due to the peculiar geographical construction of Gomero Island. It is traversed by numerous gullies and deep ravines, running out in all directions from the central plateau. As they are not bridged, they can only be crossed with great difficulty; hence a man living within a stone's throw of another in a straight line has often to go many miles when he wishes to see and speak to his neighbor. This. it is conjectured, led to the adoption of whistling as a useful means of communication, which has gradually assumed the proportions of a true substitute for speech.—*Cincinnati Medical Journal.*

PROFESSOR GERMAIN SÉE ON DISEASES OF THE HEART.—Cardiac diseases, according to Dr. Sée (Paris correspondence, *Lancet*), are not distinct from one another. It is the same affection, presenting itself under different aspects, and offering different types. Whether the case be one of subacute or acute endocarditis, ulcerative or vegetating, the disease is always parasitic, and this view leads to a no less revolutionary deduction, that of the negation of their inflammatory nature. Under the latent, and sometimes the remote, influence of a specific disease, especially of articular or choreic rheumatism, the endocardium is exposed to the action of the microbe, easily defined in this part, although not so readily recognized in the joints. At other times the cause is a typhoid fever, or an attack of diphtheria long forgotten, scarlatina, infectious pneumonia, or even syphilis. There is no exception to this rule of the parasitic origin of valvular or myocardial mischief, except in chronic affections of the aortic orifice of old people, which coincide and result from the fatty, atheromatous, and sclerous changes of the arteries. Like all other cardiac diseases, those of the aortic orifice in the young are parasitic. It is degeneration without a trace of inflammation that is found in all heart lesions, whether acute or chronic, and to this condition Professor Sée would give the name of "endocardie." The same parts, the same elements, and the same spots are invaded, the permanent

lesion consisting of a hyperplasia of the conjunctive tissue. The disease is a continuation of the morbid process, which began in an acute or subacute form, perhaps unperceived by the patient or medical attendant. There is, consequently, but one cardiac disease presenting two types—the endocardial and the valvular types. A third type is due to sclerous, atheromatous, and other changes in the arteries, comprised under the general term "arteritis," due to age, alcoholism, gout, diabetes, etc. The fourth type, and to which Sée assigns the most important place, is that condition of the heart which is caused by sclerosis of the coronary arteries, leading to degeneration and narrowing of the vessels, and ultimately to sclerosis of the myocardium—the fifth type. In the sixth class Professor Sée places the hypertrophies and dilatations consequent upon primary valvular disease. The seventh class comprises the nervous troubles. Professor Sée does not think, however, that palpitation and acceleration of the heart's action ever leads to hypertrophy. A pulse of 140 may exist without producing this effect. Nor does exophthalmic goitre lead to the slightest lesion or fatigue. The eighth type is the pericardiac, the cause here being always parasitic. In the ninth and last category come dilatation and aneurisms of the aorta.

Tuberculosis of the Biliary Passages.—According to the Paris correspondent of the *New England Medical Monthly*, M. Toupet showed a liver, at a recent meeting of the Anatomical Society, presenting tuberculosis of the biliary passages and a formation of biliary cavities. MM. Rilliet and Barthez have already described this form of hepatic tuberculosis, and M. Sabourin has made microscopic researches on the subject. The liver shown by M. Toupet presented certain peculiarities not as yet observed. Upon cutting the hepatic canals, these were found to communicate with the biliary cavities; on the walls of these there were grayish granulations, which were simply tuberculous granulations. The communication of the biliary cavities with the large hepatic canals has, according to M. Sabourin, never been observed before. The tuberculous granulations on the wall of the hepatic canals, the existence of tuberculous follicles in the wall of the biliary cavities, were facts which contradict the opinion of Cruveilhier, who considered these lesions as simple angiocholitis.

Precocious Maturity.—The case is recorded by Diamant of a young child who began to menstruate regularly from the age of two years. The menses have taken place up to a short time ago without intermission, and last for five days. The child was born in 1882, and at the end of twelve months had cut all its teeth. In 1886 it weighed fifty-nine pounds, and now in its sixth year it weighs seventy-nine. Till a short time ago it was robust and well. The head and upper extremities are similar to children of its age, but the buttocks and thighs are remarkably developed. The breasts are prominent, and the pubes and axillæ are furnished with hair. The child speaks in a bass voice. Up to January of the current year the health of the child continued good, but since then menstruation has ceased; at each menstrual period the child is seized with epileptiform attacks, and the latter have tended to become more serious both in number and severity.—*Medical Press and Circular.*

Fœtal Blood at Birth.—Dr. Scherenziss, of Dorpat, has published some interesting observations on the condition of the blood at birth. The specific gravity is, he finds, markedly lower than that of the blood in the adult. The hæmoglobin is also much less than in adult blood, the proportion being 76.8 to 100. The amount of fibrin is only about two-sevenths of that in the blood of the mother. Fœtal blood cannot be analyzed quantitatively by washing with saline solutions, a large part of the constituents of the corpuscles, which appear to be in a very loose state of combination, especially the hæmoglobin, going over in the filtrate. Fœtal blood is richer in saline matters than the blood of adults, especially in insoluble salts. The sodium salts are somewhat greater in amount than in the blood of adults, but the potassium salts decidedly less. The sex and the weight of the child appear to have no influence on the quantitative constitution of the blood at birth.—*The Lancet*, November 24, 1888.

The Late Dr. Samuel W. Gross.—At a meeting of the Philadelphia County Medical Society, held April 24, 1889, the following minute was unanimously adopted: "By the death of Dr. Samuel W. Gross this Society has lost an industrious colaborer, a wise counsellor, and the profession one of its most brilliant ornaments. As a student, practitioner, and teacher he possessed, with remarkable surgical acumen, unusual power of analysis and deduction, and his lectures, like his mental workings, were conspicuously clear, concise, logical, and vigorous. He was an earnest student of the progress of surgery in all countries, with more respect for the experience of the present than the traditions of the past; never satisfied to stand still, and ever advancing with the progress of science, he kept his teaching always apace with the rapid strides of surgical knowledge. As an operator he was bold, conscientious, and successful. Possessed of broad views, he was quick to recognize merit and to welcome truth by whomsoever presented. He took an active interest in all that pertained to the welfare of the profession and was ever ready to work for its promotion. He possessed positive convictions and was frank in their expression. As a companion he was genial and entertaining; as a friend, generous and true."

The Boy or the Bag.—Dr. Audley Haslett, of Brooklyn, writes: "Might it not be well to warn readers against a waste of sympathy for the sick boy into and out of whom Professor Silliman is represented as recommending the breathing of six or eight quarts of nitrous oxide gas (Medical Record, April 20, 1889)? His sudden and somewhat irrelevant appearance upon the scene excites a suspicion that he really intruded upon and usurped the place of a 'silk bag,' with which, possibly, the experiments were performed."

Congenital Malformation in an Ancient Egyptian.—At a recent meeting of the Royal Academy of Medicine in Ireland, Professor Bennett exhibited a case of congenital malformation in a mummy. The bones were those of an Egyptian mummy that was many years ago placed in Marshe's Library. There was an extraordinary contrast between the two humeri. The left was perfectly normal, and was apparently that of a full-sized man. The other humerus was very small and stunted, and had at the elbow-end this remarkable peculiarity, that it was wider from condyle to condyle than the bone on the sound side, while the distance between the margins of the articular surfaces was a trifle less. The upper extremity of the stunted humerus articulated with a joint which showed traces of chronic rheumatic arthritis. The joint was evidently one in which motion had taken place. —*Medical Press and Circular.*

Action of Bromide of Potassium on the Nervous Centres.—Drs. Rossi and Agostini have recently made some experiments with a view to determine the action of bromide of potassium on the nervous centres. They gave sixty grains of bromide of potassium daily to a dog weighing about ten pounds. After five or six days it showed some difficulty in movement, and tremor. Later there appeared paralysis of the fore-limbs, and afterward of the hind-limbs, with loss of appetite, diminished sensibility, torpor, and, at the end of fifteen days, death. A chemical examination showed the presence of bromine salts in the brain and cord. There were also evidences of considerable vascular dilatation, with hemorrhages into the vascular sheaths and into the nervous tissue. In the cord there was in addition some swelling of the white fibres with, here and there, a rupture of the fibres.

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THE QUESTION OF THE RADICAL CURE OF DEEP URETHRAL STRICTURE.[1]

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GENTLEMEN: It has seemed to me appropriate to lay this question before you that, by an interchange of experience, we may appreciate what views we, as a society, entertain in regard to it, and in how far the innovations in the old operative method, which have of late appeared, promise to be of assistance to us in the future.

My remarks will be confined to organic stricture situated at and beyond the bulbo-membranous junction. Strictures lying in the pendulous urethra have been demonstrated to be capable of radical cure, chiefly by the unceasing and brilliant efforts of Professor Otis. I think that we may all accept it as a demonstrated fact that internal urethrotomy, preferably performed with the dilating urethrotome, will, if the incision be deep enough to extend entirely beyond the outer limit of the stricture-tissue, radically cure organic stricture of the anterior urethra. All honor belongs, in my opinion, to Dr. Otis for having been a pioneer in the demonstration of this fact.

For the deep urethra, however, we are still in the dark, and, notwithstanding claims which appear from various sources, no one is yet in a position to say what, if any, operation will radically cure deep organic stricture, while our daily experience demonstrates that after all operations a cure is usually maintained only at the expense of the occasional introduction of a dilating instrument.

In order to lead up to what I shall have to say later, I must introduce a few words of description here as to what I consider to be the three classes of organic stricture as they are clinically encountered in the deep urethra. They are: (1) The soft stricture; (2) the purely fibrous cicatricial structure; (3) the inodular stricture.

1. By soft stricture I mean very superficial organic lesions, doubtless only involving the surface of the mucous membrane in the deep urethra, the underlying tissues being presumably free from anything more grave than congestion and spasm. I say presumably, because I have no pathological acquaintance with this stricture and only know it clinically.

Clinically it certainly is found. It follows gonorrhœa—perhaps shortly, perhaps remotely. It is generally situated just at the bulbo-membranous junction. It is commonly accompanied by a moderate gleet as one of its symptoms. It yields in other respects all the symptoms of stricture, even to the causation of complete retention. It may not be possible to pass such a stricture with a whalebone filiform bougie used carefully for a long time, and yet a blunt steel sound of moderate size, held properly, will presently in many cases pass with a sudden motion through the obstruction and be grasped upon withdrawal. Blood will often be found upon an instrument so passed.

If now a soft bulbous bougie, a little smaller than the sound, be carefully introduced, it will encounter the obstacle, pass through it after a little manipulation, and upon withdrawal the shoulder of the bulb will catch upon the obstruction and come through with a jump, demonstrating it to exist as a linear organic band. There will usually be blood upon the bulb.

Now immediately, one after the other, conical sounds of increasing sizes can be introduced, until an instrument as large as the urethra will take may be readily passed into the bladder—all this at one sitting.

This I call a soft stricture. You have doubtless all encountered it many times clinically. It is not ordinary inflammatory stricture; it is not simple urethral spasm. Both these elements generally also enter into it, and intensify it, but there is over and above a superficial linear, organic element, often involving, in my opinion, only the surface of the mucous membrane. The organic element is, I believe, very slight.

2. The purely fibrous cicatricial stricture is the traumatic stricture as found in a urethra which has not been the seat of any gonorrhœal inflammation. It may involve only the thickness of the mucous membrane or any extent of the surrounding tissue, even including all the thickness of the perineum and the integument—the latter when the traumatism has directly involved the entire thickness of the perineum, or when subsequent suppuration has destroyed it, occasioned abscess, and burst or been opened externally. This stricture may also be inodular, or it may be devoid of this element and be a clean fibrous scar. It may be unattended by gleet. When such a stricture is inspected during perineal section, the mucous membrane in front of the point of stricture may be found quite healthy. The tissue cuts like true fibrous tissue, like fascia or tendon. The urethra behind is more or less dilated, its surface more or less catarrhal; there may be perineal fistula, but the hard, irregular, ill-defined, lumpy condition of inodular stricture is absent. The fibrous stricture is linear or annular, but clearly defined.

3. The inodular stricture may exist after traumatism, notably in a strumous subject and where there has been considerable suppuration, perhaps burrowing abscess and multiple fistula. The inodular stricture, however, is found in its luxuriance in cases of stricture occurring after gonorrhœa. Such a stricture is lumpy, irregular, ill-defined, tortuous—never linear. The inodular masses of tissue shade off more or less into the surrounding structures. The mucous membrane in front of the stricture, as well as behind it, is generally granular—catarrhal. Gleet is the rule; fistula may be present.

I have tried to give my idea of the types of stricture as encountered clinically. In speaking of the results of treatment I shall refer to them as the soft, the fibrous, the inodular stricture. More or less true inflammatory acute or subacute congestion and thickening may complicate all of them.

Does dilatation ever radically cure deep urethral stricture? That some deep urethral strictures become and remain permanently well after a course of progressive dilatation I believe, from my own experience, to be a fact. I have in my note-books a number of cases formerly treated by myself and by my late partner, Dr. Van Buren, which demonstrate the fact. In one such case, a very good one, which I give as a single example where the test of time was applied, a distinct stricture occasioning chronic gleet existed at five and three-fourths inches, in a man aged twenty-one. The stricture took 14 F. bulb in 1869. I treated it for a number of months, curing the gleet, and passing, finally, No. 28. Then no instrument was passed for twelve years. In 1882 I treated the patient for syphilis. He was perfectly well as to his ure-

[1] Read at the Third Annual Meeting of the American Association of Genito-urinary Surgeons at Newport, May 21, 1889.

thra and did not care to be explored, but I induced him to allow me to try his urethra with 24 F. steel sound. It passed without meeting an obstruction and was not grasped on withdrawal. The patient objected to my trying 28, which was painfully large for his meatus, but I have no reasonable doubt that it would have entered. I assert only, however, a maintenance up to 24, in a urethra which twelve years before had only taken 14, a perfection of function and a maintenance of cure for twelve years without treatment.

This, however, was a soft stricture, and it is only in this class, in my opinion, that a radical cure is at all possible by dilatation. Even in the case of soft stricture relapse is the rule and cure the exception. I believe the difference to depend on the depth of mucous membrane involved in the organic part of the soft stricture.

I do not, from my personal experience, believe that a fibrous stricture or an inodular stricture is ever radically cured by dilatation. I do believe that many of them, of both varieties, may be raised from a small to a large calibre by intermittent dilatation and may maintain enough of that dilatation for a number of years without treatment to allow all the functions to be performed and to cause the patient to consider himself well; but the test of exploration in such a case will clearly show that, while the stricture may not have recontracted enough to occasion symptoms which attract the attention of the patient, yet that it (the stricture) nevertheless exists and has very materially recontracted from the calibre at which it was left upon the cessation of treatment.

Therefore, in a general way, I think it proper to maintain that while it does all that is required in many cases, yet dilatation can only be counted upon to effect and maintain the cure of organic stricture at the expense of the occasional subsequent reintroduction of a dilating instrument for an indefinite period.

Does electrolysis ever radically cure deep urethral stricture? At the last meeting of this society, in Washington, I exposed my experiments with this method, and from the premises decided against it. I have nothing now to add, except that I believe electrolysis may sometimes cure a moderate soft stricture, just as dilatation does, and my impression is that it is in these cases the dilatation, and not the electrical current, that does the work. I am willing to retract this opinion and to believe that electricity may do more when I have the demonstration. I am even willing to admit that possibly a very mild current may perhaps have some merit in overcoming the spasmodic element, in the case of soft stricture.

Internal urethrotomy might cure radically a deep urethral stricture of very moderate extent of the soft, or even the fibrous variety—but on this point I have no evidence to offer.

Does perineal section ever radically cure deep urethral organic stricture? Since the days of Syme, external perineal urethrotomy has been the operation of choice, often of necessity in serious cases, where anything like an attempt at radical cure has been aimed at—but experience has demonstrated that the term radical is not suited to this operation, since a cure must be maintained after it by the use of the sound. This is clearly the rule. I need not demonstrate it, I believe we all recognize it, and we all accept it without trying to explain the occasional apparent exceptions.

My attention has been attracted to some of my own cases, in which I see faintly a possible explanation of the different results that follow perineal section in different cases. I wish simply to raise the point, to call for the experience of others; and to watch more closely, in future—to see whether or not my impression is a correct one. It is quite certain that some strictures, when cut in the perineum, remain open for a much longer time and are much more easily maintained open than other strictures. In what, then, lies the difference? Surely it is not in the amount of cutting done. I cut one gentleman in the perineum entirely through all the urethral tissues up to the apex of the prostate, and forward entirely through the altered bulb, and then (the whole of the anterior urethra being contracted and indurated) I introduced a blunt, straight bistoury, and from the meatus to the continuation of the perineal wound I cut as freely as I dared through the whole length of the floor of the urethra—yet he relapsed. He had already previously been cut in the perineum externally by Van Buren and Gouley, and a number of times had submitted to internal dilating urethrotomy in the pendulous urethra. His strictures were fiercely inodular.

If, then, the difference of result does not wholly lie in the extent of the cutting done it must depend upon the quality of the tissues cut—and this is the distinction I wish to make.

I believe it possible that a purely fibrous stricture in the deep urethra may be radically cured by thorough perineal section, a result which, I believe, may not be usually attained in the case of inodular stricture.

Whether the gonococcus continues to live and thrive as a local irritant in the case of inodular stricture;

Whether a strictly and purely fibrous stricture can ever be other than a traumatic stricture in a healthy urethra;

Whether the inodular tissue can be wholly dissected out and thus leave a traumatic fibrous scar, properly severed by perineal section, to constitute a radically cured stricture, are questions for the future to decide.

My testimony on the subject is not extensive, since I have only quite recently begun to think about the matter—but it is suggestive, and I will detail some cases. They are all taken from private life—no hospital material is used. I have selected a few instances which have not yet been as severely tested as I hope they may be after a longer time, the reason being that my attention was not directed to the investigation, and some of the earlier results that I now record were curiosities to me when I noted them. I did not attempt to explain them at the time.

Case I.—X——, aged fourteen, was found by me in March, 1873, in bed suffering lamentably from the effects of stricture with over-distended atonied bladder, from which partly decomposed urine escaped only in overflow as the result of constant, painful, straining effort.

In the spring of 1871, two years before, he had fallen upon a fence. I was told that a slough separated from the perineum after urinary retention of many days, both ends of the severed urethra being exposed in the wound. This wound contracted and the boy was cut in the perineum in Boston, but no instrument was passed through the urethra after the operation. After some weeks a catheter was tied in through the urethra, and was retained for three weeks. Later, sounds were introduced a few times, the patient taking ether on each occasion—and then all treatment was suspended.

When I saw him only a filiform whalebone bougie would pass, the bladder was greatly distended, vesical tenesmus was excruciating, only a little urine coming away at a time in drops, the dribbling being constant, but accentuated by a manœuvre which the boy had learned, namely, passing a finger into his rectum and scratching the anterior surface of the gut with his nail. In this manner he had produced a narrow crescentic stricture on the anterior wall of the rectum about an inch above the anus.

Upon a whalebone guide I freely incised the perineum through the scar left by the old incision. I found the stricture to encircle the urethra, to be very tight, fibrous, annular, with no inodular tissue about it. It was a firm, narrow, purely fibrous cicatrix. I cut through it freely upon the roof as well as upon the floor of the urethra. Recovery was prompt and uninterrupted. The penis was small, and 21 French was the largest size that I could get to pass the anterior urethra after incising the meatus.

After recovery No. 21 was passed into the bladder, once a week, for about a year, then less often until the intervals became three months.

In May, 1877, a little over four years after the operation, he left town and disappeared from view; considering himself well, he passed no instrument whatsoever.

In May, 1878, five years after the operation, one year after the last introduction of any instrument, he reported well, and I introduced easily into his bladder No. 27 French, six sizes larger than the size to which he had been cut. He was now nineteen years of age, his penis had developed, and the site of the stricture had enlarged along with the rest of the urethra. I have not seen him since.

CASE II.—In October, 1883, I was called by Dr. Fisher, of Hoboken, to see a youth aged thirteen. Two months previously he had fallen upon a fence and ruptured the urethra, while in the South upon a visit. The surgeon who saw him there failed to reach the bladder with a catheter, and therefore drew the urine with an aspirator during four days. Perineal abscess formed. It was opened, but the urethra was not incised.

When I examined the patient no urine passed the meatus, but all escaped in a fine stream through a small perineal fistula as a result of repeated and very severe straining efforts.

Filiform bougies, after prolonged and patient effort, failed to engage at all in the stricture. The scrotum still bore marks of recent inflammatory action; the urine was acid, 1.010, and contained pus and blood.

Aided by Dr. Fisher, I cut this boy in the perineum without a guide. The urethra was absolutely healthy up to a point just within the membranous urethra—the strictured point. The stricture was cut cleanly through in the median line, upon the roof as well as upon the floor. It was annular, circular, fibrous. There was no inodular tissue about it. The urethra behind the stricture was moderately dilated, congested on its surface, and showing a fistulous opening on the floor. This was opened into the original incision.

No. 19 French steel sound was the largest size that could be made to enter the anterior urethra after incising the meatus; the boy had not reached puberty and the genitals were rudimentary.

Recovery took place without accident, and then No. 19 French was introduced into the bladder once a week.

In December, 1885, two years after the operation, the boy called at my office for inspection. The penis had enlarged materially. Every urinary function was perfect, the urine bright and free from pus. No. 19 French had been regularly passed once a week, but no larger instrument.

Recognizing that the advent of puberty had enlarged the urethra, and wishing to test the site of the stricture, I gave the boy 21 French and asked him to pass it. It went easily, and he immediately followed it by a 23, which passed as readily as the 19, and was as large as the meatus would at that time admit. This proved conclusively that the anciently strictured area had increased in size uniformly with the rest of the urethra, and this without being dilated beyond the point to which it had been originally cut. It had increased four sizes in two years.

I ordered the boy from this date to pass 23 French into the bladder once a week. In June, 1886, six months later, he again appeared, with a penis now slightly larger. This time, without trouble, No. 24 was introduced.

At the end of January, 1887, seven months later, he again called, and passed without difficulty No. 25, and then immediately No. 28 French was passed by me to test the urethra. It entered without encountering obstruction, and upon withdrawal was not grasped.

May 11, 1889, two years and three months later, he again called at my request. He had introduced into his bladder a 28 French steel sound, once a week, since his last visit. He was now nineteen years of age, six feet and one inch tall. His penis measured three inches in circumference. I passed No. 30 French into his bladder easily, yet it appreciated slight resistance in the perineum and was moderately grasped upon withdrawal. I then introduced No. 29 metallic bulbous sound. It passed easily, but on withdrawal the shoulder of the bulb was retained by the stricture at four and three-fourths inches, and a little force was required to pull it through. No blood was upon it. In short, here is a case in which a fibrous scar had increased in size, with the development of the genitals, eleven sizes (French) in five and a half years. The scar is, of course, there, and always will be. How retractile it is I shall find out later.

CASE III.—During nearly the entire year 1887 I treated a young gentleman, aged twenty-five, for mild, persistent, relapsing gleet and irritable bladder—and failed to cure him. The meatus had been cut to 30 before the patient saw me, by another surgeon, whose efforts to cure the gleet had been ineffective. The 30 would enter the bladder with difficulty, always bringing blood from a tight band just at the bulbo-membranous junction. I tried to force a larger size, but only succeeded in lighting up a mild cystitis and aggravating the gleet.

This patient urgently insisted upon being cured, as he desired to marry. The gleet and, presumably, the stricture were of gonorrhœal origin. No irrigation, deep urethral instillation, anterior injection, internal treatment, change of air, rest, diet, or the use of No. 30 sound did him any good—therefore I cut him in the perineum, severing the small linear band both on the roof and on the floor of the urethra completely. There was no inodular tissue. This I did in December, 1887.

One year later he visited me in my office, having passed no instrument for eleven months. He was fat and perfectly well in all respects, the urethra dry, the urine like crystal. I passed a No. 33 French steel sound. It entered easily, was not grasped on withdrawal, no blood followed.

This patient is now happily married.

It will be observed that in all these cases the stricture was fibrous, containing no inodular tissue. In two of them the cause was severe traumatism in young boys before the age of puberty, the urethra being uncontaminated by any previous gonorrhœa. In the other, although there had been gonorrhœa, the stricture was a moderate, narrow, dense, fibrous band, without inodular tissue.

I have no such good results to report of any inodular strictures I have treated; and my impression therefore is—an impression stated with all possible reserve—that when the stricture is purely fibrous, especially if there has been no gonorrhœa, and when this stricture is very freely divided, both upon the floor and upon the roof of the urethra, and kept widely dilated during cicatrization—in such cases radical cure is possible after perineal section. Further observation must decide this point. I have only lately begun to consider it. A few years will establish the fact or disprove it. I by no means now positively affirm it.

In inodular strictures various degrees of cure are attained by perineal section. In some cases—with subsequent dilatation for a considerable period—a condition is reached in which the stricture contracts down to a certain point, and there seems to remain, without need for further dilatation. In other cases, after leaving off the use of dilating instruments, the stricture recontracts up to the point of again causing, it may be, complete obstruction of the urinary outflow.

The question of the suture of the urethra—either the immediate suture (after traumatism) of the divided ends of the severed canal, of the divided ends after the excision of the strictured area, or of the floor of the urethra after perineal section, all of which operative methods are much spoken of of late, and praised for their efficacy in hastening cure—has no direct bearing upon the question of radical cure by any method, and therefore the discussion of this important operative method may be ignored for present purposes.

Not so, however, the other two comparatively recent operative novelties, excision of stricture and transplantation of mucous membrane derived from an outside source.

Both these methods, to my mind, open up for us in the future a chance of more often effecting radical cure in the case of inodular stricture than any other means we now possess. I have no personal contribution at present to make regarding either of these methods, but the results claimed fall in so directly in support of my impressions regarding the difference between simple fibrous and inodular stricture that you will pardon me for calling your attention to what has been done by others.

A. Stricker[1] (of Göttingen) first distinctly called attention to the question of the excision of the strictured area of the urethra by publishing, in 1881–82, some operations performed by Professor König, of Göttingen, and alluding to an article published by König (with cases) in 1880.[2]

The next important contribution to the subject is by Heusner,[3] who states that he first operated in 1883, not at the time being aware of König's published work. Heusner's first case was a man, aged thirty-eight, whose membranous urethra had been crushed two years previously. Abscess and cicatricial stricture followed, and one year later perineal section was performed, but the stricture recontracted, so that much distress was experienced and the patient was obliged to resort to the use of a catheter several times daily.

In June, 1883, Heusner dissected out all the strictured area, two centimetres in length, being a portion of the bulbous and of the membranous urethra. The excised portion was lined with granulations and wart-like excrescences. The divided urethral ends were now found to be three centimetres apart. The front end was loosened with scissors from the pubic arch, after which approximation of the severed ends was effected and five points of catgut suture placed to hold them together. A catheter was tied in for twelve days.

No sound was used, as after ordinary perineal urethrotomy. On the thirty-fourth day a No. 24 French catheter passed easily, and one year after the operation the patient in a letter declared himself well, saying that never since the operation had he been obliged to resort to the catheter.

Another case, published previously by Heusner, and treated without sounds, died two and a half years after operation. His stricture had partially recontracted (to size 20), and he died of kidney and bladder disease. Autopsy showed at the site of the operation a fine linear scar.[4]

Surely these results have an important bearing upon the matter under discussion. In Case I. perineal section is a failure, another operation being called for in a year, after which latter the patient reports himself well a year later, not, apparently, having used a dilating instrument meantime. In Case II.—a fine linear scar—somewhat contracted, it is true, but yet admitting No. 20 (F.), is found on autopsy two and a half years after operation.

Wölfler,[5] of Graz, in 1888, details three cases of impermeable urethral stricture which he treated by total excision of the diseased area. He allowed the wound to granulate, and on the eighth day covered the granulating roof and sides of the urethra with strips of mucous membrane (as in Thiersch's method for the skin), several centimetres long, one to two centimetres broad, cut with a razor from the prolapsed uterus of a convenient patient. These strips were not sutured in place, but retained in position by iodoform gauze greased with vaseline and packed in place—the bladder being drained.

Three or four days later, on removing the dressing, the surface was gray and greasy (*schmierig*), looking as if covered with a fine veil. Four or five days later the surface had become a smooth, shining mucous membrane. All the three patients treated in this way recovered, although each, unfortunately, still had a small perineal fistula at the date of report.

The first patient was seen a year after his operation, not having been sounded in the meantime. He is reported as urinating in a thick stream. The second patient had a similar result, but had not been observed so long. After eight months No. 20 (F.) sound passed. The third case died six months after operation—from double nephritis. The continuity of the urethra was found to have been entirely reproduced, so that the boundary where the old and the new mucous membrane came together could not with certainty be determined.

E. Meusel,[1] of Gotha, after excising a stricture in the perineal region, transplanted with great care upon the raw surface immediately, not waiting for granulations, a piece of the patient's inner layer of the prepuce, of twelve square centimetres (5 ctm. long, 2½ ctm. wide), attaching it with four catgut satures at each end to the divided ends of the urethral mucous membrane, and retaining it in place with a woven catheter tied in. On the third day the dressing was changed. On the fifth day thorough inspection showed that the entire flap had taken. The catheter was removed after eight days. A small fistula still persisted at the date of report. Bardenhauer, in a letter to Meusel, states that he has successfully employed this method.[2] A number of other writers have come out in favor of the excision of stricture, notably Poncet,[3] of Lyons, but have added nothing of interest more than I have already detailed.

These results—not absolutely perfect, as it will be seen, since fistula in the perineum remained, although small in extent—these results seem to me to open up for us in the future new possibilities in the way of radical cure.

If we can cut away utterly all inodular tissue in a given case, and either by suturing the divided urethral ends transform an inodular stricture into a linear fibrous stricture, or by transplanting foreign mucous membrane reproduce a portion of the lost canal, we have surely at our command means which, if developed, promise much in the way of effecting radical cure and relieving the patient from the disagreeable necessity of the indefinite occasional use of a dilating instrument on pain of finding his stricture gradually recontract after perineal urethrotomy.

From what has been written, my conclusions are these:

Conclusions.—1. There are three forms of organic deep urethral stricture: The superficial linear fibrous, with inflammatory and spasmodic complications (which I call the soft stricture); the purely cicatricial fibrous stricture; and the inodular stricture, in which there is development of new inodular tissue over and above the true fibrous cicatricial element.

2. Soft strictures are occasionally (but by no means always) capable of radical cure by dilatation—and the addition of mild electrolysis does not prevent this cure by dilatation.

3. Pure linear fibrous stricture, especially if traumatic and occurring in patients who have never had gonorrhœa, may sometimes be radically cured by thorough longitudinal division of the stricture on the roof as well as on the floor of the canal, and by a maintenance of the cure for a moderate time by the occasional passage of very large sounds. I beg to reserve final opinion on this point for a future communication.

4. Inodular stricture does not seem to be radically curable by this method.

5. It seems possible that inodular stricture may be radically cured by a total excision of all the morbid tissue and suture of the healthy divided urethral ends; or, in cases where extensive loss of tissue makes such approximation impossible, by the transplantation (Wölfler's method) of strips of healthy mucous membrane derived from an outside source.

1 Park Avenue, New York, April 30, 1889.

[1] Deutsche Zeitschrift für Chirurgie, Bd. xvi., p. 420.
[2] Berl. klin. Wochenschrift. [3] Ibid., 1887.
[4] I have reported these cases in digest in Sajous' Annual of Medical Sciences, 1888, p. 218, vol. ii.
[5] Archiv für klinische Chirurgie, Bd. xxxvii., p. 709.

[1] Berl. klin. Wochenschrift, September 24, 1888.
[2] I have digested these cases in Sajous' journal, 1889.
[3] La Semaine méd., March 21, 1888.

SOME APHORISMS ON THE TREATMENT OF URETHRAL STRICTURE.[1]

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THOSE who are brought in daily contact with the hospital interne of the day find that his first surgical ambition is to cut a urethra, and his chief after-thought is how he can immortalize his name, as he believes he will do, by modifying or inventing a new urethrotome; at least this has seemed so to me. It is not my intention, nor have we the time, to discuss all the bearings of the various methods of surgical interference which individual cases of urethral stricture present, but I have thrown together, somewhat hurriedly I admit, some points in treatment which I have laid down in the form of broad propositions, so that we may at once grasp them from the point of individual experience, and, after discussion, formulate, as I am glad it is your intention to do, certain principles of practice which may guide the novice in the treatment of his cases.

The location of the stricture, whether it is in the vicinity of the meatus or near the bulb; the degree of coarctation present; the length of time it has interfered with the expulsive power of the bladder; the degree in which it has crippled the urinary tract back of it, and the character of the stricture as to its irritability or resiliency, have all a most important bearing in determining the method of treatment. Then we have to examine into the general health and temperament of the patient, and in this respect a distinction should be made between the presumed and the actual standard of health. What is considered health by some individuals will be considered anything but health by others. Especially have we to inquire into the manner in which the kidney fulfils its function, before deciding upon any immediate operative interference. The successful issue of the case will depend upon the significance or the interpretation that we give to the presence of adventitious ingredients in the urine. The question of questions, the thread upon which the life of our patient not infrequently hangs: Is the obstruction a greater evil than the remedy proposed? Must we afford *immediate* relief, or is it consistent with safety, is the balance of credit with our patient, if we employ the more *gradual* means at our command?

In the absence of the exact data showing the relative mortality after gradual or continuous dilatation on the one hand, and internal urethrotomy and divulsion on the other, I will offer the following propositions:

1st. Gradual dilatation is unquestionably the safest method of treating urethral stricture. Aside from hemorrhages, abscesses, urinary infiltration, curvature of penis during erection, sloughing of tissue, etc., the not unusual concomitants of internal urethrotomy. Rigors and urethral fever are also exceptional phenomena in gradual dilatation. Most strictures yield to this method promptly and satisfactorily.

2d. The objection usually made to gradual dilatation is that often the patient comes from a distance and seeks speedy relief. To this comes the obvious reply, that we cannot assume risks to the life of our patient in order to save time. But if time is an item, we know what continuous dilatation can do if he will confine himself to the house for a few days.

3d. A urethra that is accustomed to instrumental manipulation, will tolerate incision better than one that is not so accustomed. Should internal urethrotomy be decided upon, our patient is all the better prepared for having submitted to the obtunding effect which the passage of the instruments occasion.

4th. In the pendulous portion of the urethra are strictures often so unyielding and resilient that dilating instruments have little or no effect upon them, and it may be said that the nearer such coarctations are to the meatus, the more do they partake of this character. Such strictures are only amenable to dilating urethrotomy. But I must say, that while it is exceptional to have rigors with an elevation of temperature follow incisions near the meatus, I now recall at least three instances in which a moderate incision of the meatus, without the subsequent introduction of instruments in the urethra, occasioned very distinct rigors and fever. In one patient especially, I had not passed an instrument for eight days previous to the meatotomy, and he had, notwithstanding, a sharp attack of urethral fever immediately after the incision, which gave me considerable anxiety at the time.

5th. Other things being equal, the danger of internal urethrotomy increases with the depth of the stricture, that is, the distance the coarctation is from the meatus. The bulbous portion of the urethra is, from its anatomical nature, the most dilatable, and experience teaches that the nearer the stricture is to the bulb (not traumatic) the more it is amenable to dilatation. At least not until this has been fairly tried and has failed, should incision of this portion of the canal be thought of, and then

6th. External division is to be preferred to the internal in all strictures requiring incision that are accessible from the perineum (notably if of traumatic origin.) In certain quarters across the water our surgical brethren regard the immunity from symptoms, when internal urethrotomy is combined with an external perineal incision; as a revelation; but I think I can speak for you, as I certainly know I can for myself, that we have long since learned that anterior strictures divided internally are rarely attended with unfavorable symptoms (notably urethral fever) when the urine is diverted from them by a perineal opening.

7th. Slight encroachments upon the urethral calibre, when submitted to internal urethrotomy, are not, as a rule, attended with the same inconveniences that follow the operation upon narrow strictures. But strictures of large calibre rarely require cutting, unless indeed a superficial contracting band occasions sufficient reflex disturbances to require prompt relief.

8th. What has been said of internal urethrotomy applies with redoubled force to divulsion, with this addition: First, that it is unnecessary in the bulbous portion, and second, that wherever employed it is dangerous, rude, inexact, and a purely mechanical means that does not exact, and is exempt from, surgical skill. It must be relegated to the dark ages in urethral surgery.

9th. The term urethral fever has been objected to and urinary fever substituted, on the assumption that the absorption of urinary constituents is the chief factor in the genesis of the complaint; but I do not think the choice of the substitute a happy one. The first term, at least, expresses the peculiar and characteristic predisposition on the part of the urethra to resent surgical interference, as no other part of the body does. I believe that urethral fever can, in the majority of instances, be proved to be a vaso-motor disturbance of reflex origin, which we may infer from the fact that severe constitutional symptoms sometimes obtains in cases where the stricture is simply overstretched, and where there is no hemorrhage or other evidence of injury or solution of continuity of any portion of the urethra, whereby the ingress of urinary constituents can result. While the contact of urine with a recently made wound in the urethra is undoubtedly in some way a potent factor in creating constitutional disturbance, it seems improbable that absorption of urine can obtain in sufficient quantity from an epithelial abrasion, produced by the passage of a sound, that is capable of producing in rapid sequence rigors, fever, suppression of urine, uræmic coma, and death. If, in response to a laudable curiosity to ascertain the sensations which the introduction of an instrument occasions in others, we pass for ourselves, the first time, presumably, into a healthy urethra, with the utmost delicacy, a blunt-pointed,

[1] Read before the American Genito-Urinary Association, May, 1889.

moderate-sized bougie, we become conscious of a disagreeable feeling, akin to pain, the moment the instrument enters the fossa navicularis, which becomes more and more intense as we approach the deeper parts of the canal and reach the vesical neck. It may be said that this is caused by a denudation of the epithelium from the mucous surface in opening the lumen of the urethra; and that some injury has been inflicted is shown by the fact that the contact of the urine succeeding the passage of the instrument occasions similar pain. But it must be borne in mind that the irritation is only felt during the contact of the urine, and it subsides too soon (generally after the second act of micturition) to suppose it possible that a reproduction of the epithelium has taken place. Above all, I may well question the ground upon which toxic infection, as a factor in urethral fever, is based, since I find that irritable strictures are often cut with advantage, and without producing any disturbance, although the passage of the sound in dilatation almost invariably occasioned it.

10th. As to ultimate results, thorough dilatation compares most favorably with urethrotomy. An absolutely radical disappearance of a narrow stricture, if it be possible, is of the rarest occurrence. In strictures of large calibre the results are more favorable, whether treated by internal urethrotomy or by dilatation. But there is evidence at hand that the means adopted for the detection of strictures of large calibre are often deceptive in the extreme, and that urethral obstructions are met with where in reality there is absolutely no pathological change in the canal. That such obstructions are always curable we give ready assent to. Then, again, there may be inflammatory thickening or granulations of the mucous membrane sufficient to impart a distinct sense of unevenness or inequality at some point to the manipulator, but in these cases there is often no organization into a stricture. This obtains in many cases of chronic urethral discharge. I am confident to have seen, and so have you, no doubt, thickening of the urethra disappear permanently with the discharge by the repeated introduction of steel sounds of increasing calibre. I have now a number of such cases prominently in mind that were so treated years ago with permanent benefit. That some of the radical cures of strictures of large calibre by internal urethrotomy were of the nature of temporary indurations of the mucous membrane, and not true strictures by organization, becomes thus highly probable. Finally, that some strictures show but little disposition to contract is a logical deduction in favor of internal urethrotomy.

I will not touch upon three or four other methods of treatment which have for their claim a radical cure, for as yet they are *sub judice*, but in the language of Goethe,

> " Ye shall wonders see :
> What has been is not to be ;
> What is said is not to say—
> Before the break of day
> Ye shall wonders see."

An Imitation Hospital.—In a Hungarian town the Red Cross authorities had neglected to organize their hospital for two years, when they received notice of an Archducal visitor who would be with them in two days. No time was to be lost; a building was rented for a month and one hundred workmen set to work to put it in order. Beds and other necessaries were borrowed from a real hospital and patients hired. The Archduke declared himself satisfied; but he had scarcely turned his back when the workmen were called in to restore the house to its former condition. The patients were dismissed—but here there was a hitch. They were receiving two florins a day for being sick, and knew they had a good thing. They were put out by force; took their cases into court; the committee was compelled to pay them their wages; and as the affair c me to the Archduke's ears, the originators of the scheme failed to obtain the decorations they expected.

THE MOVEMENTS OF THE THORAX AND LUNGS CONSIDERED IN THEIR RELATION TO CERTAIN PULMONARY DISEASES.[1]

By J. WEST ROOSEVELT, M.D.,

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While studying the question of why the tubercle bacillus affects so often the upper lobes I met with many theories depending upon various assumptions in regard to the amount of expansion and contraction of various parts of the lungs. The statement is often made that the upper lobes move less freely than the lower. This alleged deficient movement is said to produce impaired circulation, impaired vitality, etc., and also by some seems, for reasons incomprehensible to me, to be considered an efficient cause either for the inspiration of bacilli by the upper lobes from the air, or for the lodegment of them in the upper by the relatively stronger expiratory efforts of the lower lobes, either in normal respiration or in coughing.

No satisfactory reason, as far as I know, has been given by those who believe that bacteria are drawn into the lungs by the air-currents for the frequent selection of the upper lobes by the tubercle bacilli and of the lower by the pneumococci. Whatever be our views of the etiological significance of the latter, its frequent presence must be admitted. It is rather hard to imagine a "selective action" of air-currents which drives one up and the other down in the air-passages!

It is important to study the chest movements, and for this reason I call attention to certain facts (some of which are, I believe, new) observed by me while going over the subject. The observations throw no light upon the problem presented in phthisis. They rather render it more obscure. They seem interesting, however. It will be seen that most of them are merely repetitions of work done before by others. In spite of this, many of the facts are not generally known.

I call attention especially to the movements of the ribs, since these movements are usually regarded as producing the alleged deficient expansion of the upper lobes.

My observations were made almost entirely upon professional models, male and female, who always were given the idea that they were posing and no mention was made of the respiration. These models were used to posing and used to being nude. Their respiration was probably very nearly normal.

The first point noted was that the profile view of the chest figured by Hutchinson and others is not the one best suited to show the greatest movements. The sternum moves but little, particularly in an antero-posterior direction. The greatest movement seems to be in the neighborhood of the anterior axillary line. A "three-quarter" front view shows the chest expansion to best advantage. From this point also quite considerable backward movement of the lower ribs is often visible. The whole inspiratory movement in healthy subjects consists in moderate elevation of the sternum, with slightest protrusion forward and much greater expansion at the sides, especially near the line mentioned, together, frequently, with some rearward movement of the lower ribs. The abdominal and thoracic types of breathing need not be described. The ribs seemingly are drawn somewhat nearer together, their forward ends elevated, and they appear at first sight to rotate as generally stated.

The motion of the ribs usually described is about two axes; one a line drawn through the head of the rib perpendicular to a line from the vertebral column to the sternum, and the other nearly corresponding to a line drawn from the head of the rib to the sternum. This complicated motion can only take place if the articulations practically form a ball-and-socket joint. Now the ribs are fastened to the vertebral bodies and intervertebral substance by joints which would admit such movements;

[1] Read before the Practitioners' Society, April 5, 1889

but they are also fastened at their necks to the transverse processes. This makes the double movements described almost impossible. True, the attachment at the transverse processes will in the cadaver permit a little movement about the axes mentioned, but it is slight. On the other hand, revolution around a line drawn from the tubercle to the middle of the articulation with the vertebral body is very free. Such a line runs from within somewhat outward, from before backward, from above downward. Now the normal position of the ribs is such that their tips lie much below their heads. The curves of these bones are such that it is almost impossible to describe them. If a rather stout brass rod be bent so that its curves correspond with those of the ribs, and if it be placed in a journal which allows only motion round one axis, and if this axis be inclined so that it corresponds with the line mentioned, it will be seen that movement about this axis reproduces almost, if not quite, exactly the rib movements. If on the cadaver the thoracic contents be removed, together with all muscular structures save the intercostals, and if the ribs be elevated by pulling strings attached to the upper ribs near their middle, movements closely simulating those of normal respiration will take place, the sternum will be elevated and slightly protruded and all diameters of the thorax increased, yet the motion will be seen to take place almost entirely by revolution round the single line drawn through the tubercle and head as described. The following experiment I have not tried on the human subject: A dog, recently killed, was skinned and all the structures about the thorax, save intercostals and diaphragm, removed. Inflation of the lungs by air forced into the trachea produced a similar apparent elevation and rotation of the ribs, yet it could be seen to take place round an axis similar to that described in the human subject.

Drawing lines as described, it will be seen that the axis of the first rib is directed much less backward and more outward than the others. The bone has less downward curve than the rest and also has a longer cartilage than those just below it. This produces more up and down and less lateral movement than the others. The second rib resembles somewhat the first. The third and all the rest, except possibly the tenth and eleventh, move nearly about the axis mentioned.

The costal cartilages, from the third or fourth down to the floating ribs, are attached in such a way that they run in an upward as well as inward direction. As we descend, this upward slant is more marked. This arrangement causes the cartilages to become more horizontal during inspiration, and therefore to permit of much lateral expansion of the chest, while the sternum is not much advanced.

The upper part of the sternum advances, I think, more than the lower, and during forced inspirations the bone seems to bend at the junction of the gladiolus and manubrium. Of course it would be useless or harmful to increase the antero-posterior chest diameter over the heart. It is interesting to note that the triangularis sterni muscle is so attached as probably to help straighten the lower cartilages while holding the lower sternum in.

The next question to be studied is, How much lung is moved by the ribs, and is the motion at any part of the thorax greater or less *proportionally to the bulk of lung-tissue in that part?* Manifestly it makes no difference whether the actual movement of the upper ribs is less than the lower, or whether this movement produces less expansion of the upper lobes than the lower, unless it can be shown that *in proportion to their bulk* the upper lobes expand less.

In the first place, it is hard to say whether any part of a structure like the lung is really more affected by the thoracic movements than any other. Admitting that it is, the upper lobes are much smaller than the lower. Their pyramidal shape is such that slight rib movement should affect them greatly. It is not easy to see that they are at all likely to be less expanded than the lower in respiration. It is interesting in this connection to note that females with the thoracic type of respiration have phthisis in the upper lobes quite as commonly, proportionally to all cases of phthisis in that sex, as males in whom abdominal breathing is the rule. Surely, if there be any difference in the amount of expansion in different lobes, and if the upper expand less than the lower, the difference should be more marked in males than in females. Nevertheless, the bacilli lodge in the upper lobes in females.

The lungs are attached by the ligamenta lata to the sides of the pericardium and to the diaphragm. It is easy to see that it is along this attachment, and along the vertebral column that least thoracic movement can occur. Here, and not in the upper lobes, should we find the evil effects of deficient expansion. Yet we do not have tubercle very frequently here.

I show you a corrosion preparation of the bronchi and of the main branches of the pulmonary artery of an inflated lung. It shows, I think, that the bronchi do not really divide "dichotomously," neither can one exactly agree with Aebey's axial system of branches. The tubes sometimes break up into two, but more frequently send out lateral branches. The main points to which I wish to call attention are: First, that the bronchi and vessels going to the lower lobes lie near the inner surface of the lung, precisely in the region where, theoretically, there should be least motion, and that the main bronchus to the upper lobe runs upward near the inner surface and breaks up into branches, which, on the whole, are nearer this surface than the others; second, it will be seen that in a general way each branch runs so that it lies nearly in the line in which the part of the lung it supplies must move. Thus the tubes and vessels are not bent. It will also be seen that the transverse section of the main bronchi is about proportioned to the amount of lung it is to supply.

The movement of the air in the lungs is a problem so complex that one is astounded at the calm way in which statements are made regarding it by various authors. One thing is clear, however; no more air is inspired than is expired in any lobe. Now, it is frequently said that air is forced into the upper lobes in coughing, etc., so that these become over-distended, and that this air is so driven by the more violent contraction of the lower lobes. If this be so, we must assume that a pressure is produced which must enlarge these lobes in a downward direction against the more violently compressed lower lobes. If so, we must admit that we have in the lower lobes a lessened pressure or this expansion could not occur. Then the lesser pressure must produce the greater! The lungs cannot expand where they are against the chest-walls. The only direction in which they can do so is downward. In regard to theories based upon any peculiarities of inspiration and expiration in the upper lobes, it can only be said that whatever applies to one form of bacterium applies to every other, and that the same is true of fine dust. All bacteria do not show the peculiarity of the tubercle bacillus. Some explanation must be given of why this is so before we can accept the view that there is any peculiarity in the air-currents.

The main points which I have tried to demonstrate are these:

1. It cannot be shown that any part of the lung moves, in proportion to its bulk, in respiration, less than any other.

2. That the part of the lung which actually (not necessarily relatively) must move least is that lying near the inner surface.

3. That it is impossible for the upper lobes to be expanded, in any act of forced expiration, by air driven into them from the lower.

4. No explanation exists of the frequent selection of any lobe by any inhaled bacterium.

How shall I cure my husband of snoring? asks a subscriber's wife. Who will help her?

CLINICAL CONTRIBUTIONS TO THE TREATMENT OF ERYSIPELAS.[1]

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It is about three months since I had to attend a case of erysipelas, which developed upon the nates of a man whom I had operated upon for fistula in ano. Having previously determined to treat the next case of erysipelas that might come under my care according to Wölffler's method, I thoroughly cleansed the part affected, and its immediate vicinity, with corr. subl. $\frac{1}{1000}$, and covered the healthy surrounding skin with several one-inch broad strips of Mead's rubber adhesive plaster, making pretty strong traction and pressure in applying them. To my agreeable surprise, the erysipelas came to a permanent halt at the plaster's *barrière*, and the patient got well again within three or four days from the time of the onset of the attack.

In a paper "On the Mechanical Treatment of Erysipelas," read about six months ago before an Austrian medical society, Wölffler stated that in a series of fifteen cases he covered the part affected, and a narrow border of the sound skin, with traumaticin and ordinary dressings, and in so doing arrested the disease and quickly cured his patients. In his four subsequent cases he applied that method with the same good success which I followed in my own. An explanation of the way in which his mechanical treatment accomplishes its good results he has not been able to give. After gathering this new experience I looked up the literature of the subject to some extent, and was not much surprised to find about as many infallible remedies for the cure of erysipelas spoken of as one may find in reading the history of the therapeutics of diphtheria. It might, therefore, not be out of place to bring this matter before you upon the basis of a moderate number of clinical observations of my own, in order to determine eventually upon one or a few methods which can be applied with a reasonable certainty of success.

About 1863 I became acquainted with, and followed, what may safely be called the English method of the treatment of erysipelas. The diseased and a portion of the sound skin is thickly painted over with liquid tar and covered with cotton, and of the tinct. ferr. muriat. from fifteen to thirty drops are given inwardly every three or four hours. It is seen at once that this comparatively old method is of an antiseptic character to some extent, though nothing was known of Fehleisen's erysipelas coccus when it first came into practice. I have treated a number of cases in this way, as we shall see presently, and have not lost a single one; but I have never brought the disease to an abrupt termination by it.

From autumn, 1866, until spring, 1869, twenty-three cases of erysipelas came under my care at the St. Francis' Hospital of this city. The most of them occurred during the winter months, and were cases of facial erysipelas, the infection starting usually from catarrhal erosions of the nose or mouth or ear. Fourteen of them concerned women, nine men, between eighteen and forty years of age, and they remained in the hospital from ten to twenty-seven days. The general symptoms were rarely severe, of important complications in them I have no recollection, and the disease did not spread beyond the one or the other half of face and head. To these hospital cases may be added about twenty more, which occurred in private practice and which were treated on the same plan, with this difference, that five per cent. carbolic glycerine was applied in loco instead of tar. I will make brief mention of one of these cases, concerning a strong and healthy woman, aged thirty-eight, who was severely ill with an attack of erysipelas of the face and head. She bore up well under daily temperatures of 104° to 105° F., for ten days, lost all her hair after recovery, and the stunted after-growth has remained grayish-white ever since. And another, of a rather fat young man, aged about twenty-three, in whom the facial erysipelas spread rapidly over neck and head, and was associated with high fever. On the fifth day the delirious patient fell into a low adynamic condition, his fast pulse became still faster and small, and he certainly would have died of cardiac paralysis in spite of free exhibition of stimulants and excitants, if two hypodermics of three milligrammes each of digitalis, given six hours apart, had not brought down the pulse and sustained the heart until the fever left the patient, and he finally recovered.

After following this plan of treatment until about 1879, I tried, in the few cases of erysipelas that have come under my observation since, the late Professor Hueter's method, which consisted in hypodermic injections of a few drops of a two per cent. solution of carbolic acid in various parts of the erysipelatous area. My success with them was but indifferent, and it is readily understood why Hueter's method cannot be successful in stopping the disease, when we take into consideration that small groups only of the cocci can be rendered harmless by the various injections.

None of the topical applications thus far spoken of can do more than render some palliative service, and it is a matter of indifference whether we apply a two per cent. or a five per cent. or even a ten per cent. solution of carbolic acid, or a one-thousandth of corrosive sublimate or sublimate collodion, or tar, etc. The great majority of cases of facial erysipelas will get well any way, if the patient be properly taken care of. It is quite another matter with cases of surgical erysipelas of the extremities and the trunk of the body. That there may be danger to life in the course of them is, unfortunately, known too well to necessitate further argument upon it. Should Wölffler's simple method be found generally successful—which I doubt—the application would be as easy as the results were marvellous. Let us see, now, what other surgeons have done of late to arrest and cure the dangerous forms of erysipelas.

Remembering the favorable results which were obtained in Volkmann's clinic in Halle, by multiple cutaneous incisions, in cases of progressive phlegmon, it occurred to Professor Kraske, in Freiburg, to try a similar mode of treatment for erysipelas, and in 1886 he treated three cases successfully in the following way: After thorough cleansing and disinfection of the inflamed surface, he made numerous small incisions, just deep enough to reach the cutis, about one centimetre in length, and from fifteen to twenty to the square inch. This number increased toward the border of the erysipelatous area, reaching into the sound tissues also. The whole surface was then irrigated with a five per cent. solution of carbolic acid, and by gentle pressure the oozing of bloody serum from the tissues encouraged as much as possible. The after-treatment consisted in the application of dressings soaked in a two per cent. solution of carbolic acid, and changed once or twice a day. In two of the cases a single operation was sufficient to arrest the disease, in the third a repetition of it was necessary to effect a cure. Riedel followed Kraske with a series of eleven cases, in which he was successful, with a somewhat modified procedure. He limited his incisions to the border-line of the erysipelatous area, into which he made very fine incisions in great number which were from two to four centimetres long, one crossing the other at an angle of about forty-five degrees, thereby encircling the whole with a framework of cuts. For his dressings he used a one one-thousandth solution of corrosive sublimate, to be renewed three times daily. His cases, like Kraske's, got well within three or four days, and in two of them only was it necessary to repeat the operation. In most of the cases the erysipelatous process was arrested forthwith, and the fever, etc., ceased on the second day of the treatment.

In a paper read before the Medical Society of Hamburg, a short time ago, Dr. C. Lauenstein communicated his obversations on the subject. In his first case he himself was

[1] Read before the German Medical Society of New York, May 6, 1889.

the sufferer, with a severe attack of erysipelas of the arm. He was operated upon by one of his friends after Riedel's method, and the result was all that could be desired. In his second case, Lauenstein observed that the incised sound portions of the skin swelled considerably and turned red, though the erysipelas did not spread beyond them. In his next two cases he therefore laid the incisions in the sound tissues of the border alone, thereby preventing the knife from coming in contact with the infected parts. The result was just as prompt.

The majority of the cases reported by these authors were severe, progressive, and associated with high fever and considerable constitutional disturbance. In some of them the fever continued even after the operation, and the erysipelatous process went beyond the surgical barriers, but its power was not the same as before. The inflammatory processes and suppurations occasionally associated with erysipelas are not influenced by this operation, and have to be treated in the usual way.

The surgical skill required in carrying out this treatment is simple enough to allow any practitioner to do the operation who knows how to handle a knife. Moreover, it would not be difficult for any instrument-maker to make a little instrument with about five very small and sharp little blades, about one centimetre apart from each other with which to operate. Such instrument would both facilitate and expedite the work. Insignificant as the operation is, it would scarcely be convenient, or even possible, to do it without an anæsthetic, on account of its painfulness. In a considerable number of severe cases of erysipelas lives have been saved by it which might otherwise have been lost. To be sure, Wölffler's easy method will be preferable, if further experience should prove it as good as Kraske's; but, so far as I know, his experience has not been confirmed as yet by others in the severer class of cases.

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FATTY DEGENERATION OF THE VITREOUS BODY.

By FRANCIS VALK, M.D.,

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In The Medical Record of March 9, 1889, Dr. F. E. D'Oench reports a peculiar case of detachment of the retina, in which he writes of a peculiar appearance of "numerous small white dots, scattered throughout the detached portion, but most numerous near the periphery, apparently of the size of a pinhead or less in the ophthalmoscopic image, and not confluent." These dots, I suppose, were scattered about in the vitreous body and not situated in the detached portion of the retina. If so, I wish to state that I have also under observation two cases, that I would report from my note-book, as follows:

Mr. S. M. T——, aged seventy-three, was sent to me in September, 1888, complaining of spots before the eyes, with constant blurring of the vision, during the past five years. He has no pain in the eyes nor any history of an injury at any time. Says that he has noticed the spots and blurring to have appeared gradually. His distant vision was found to be $\frac{1}{10}$, in each eye, no improvement with glasses. He can read No. 1 Jaeger at nine inches, with + 3 D over each eye.

Also a man, seen at the New York Dispensary, with convergent paralytic squint, left eye, the result of a blow fifteen years ago. The sight in that eye always poor, with occasional attacks of inflammation of some kind. Six months ago he was struck on the right eye with a piece of wood and now has a detached retina with eccentric vision.

On examination of the left eye of each of these patients with the ophthalmoscope, I found the cornea, aqueous, and lens perfectly clear, but as I examined the vitreous body, using convex glasses of different power, I found it spotted with numerous white, glistening spots, situated on all parts of the substance. They appeared to be suspended in the vitreous, with very slight movements when the eyeball was turned upward or downward; while some of them seemed to be held in place by minute, dark filaments that were lost in the substance of the vitreous. These round bodies, being situated at different depths in the vitreous body, as they were brought into focus with a convex glass according to their position in front of the retina, would appear intensely white, surrounded by a dark circle, like an air-bubble under the microscope. Their position was very slightly changed when the eyeball was moved. and they did not sink downward toward the lower part of the vitreous when the eye was stationary.

I have not been able to consult Iwanoff's article on "Fatty Degeneration of the Vitreous," but I am inclined to think that this condition existed in these cases; nor am I familiar with the appearance of the vitreous body in cases of fatty degeneration, though Iwanoff says that this condition is "not of infrequent occurrence," as these are the first cases I have met in my clinical work.

In Soelberg Wells' work on the eye, p. 337, I find in speaking of the vitreous he says: "According to Iwanoff, fatty degeneration of the stroma and cells of the vitreous humor, with subsequent fluidity of the latter, is not of infrequent occurrence, more especially in the aged, in whom it is due to senile decay, and is here a quasi-physiological condition" (*Archives of Ophthalmology*, xv., 2, 4), but he does not describe the ophthalmoscopic appearances of this condition.

Also Dr. D. Webster, in an article on "Synchysis Scintillans" (*American Journal of Ophthalmology*, xii., No. 2), reports a case, as follows: "In the right eye the whole vitreous seems to be studded with small, round, white dots, with a few glistening crystals scattered about among them."

I report these cases as they seem to be the same as that reported by Dr. D'Oench and that we may some day prove what is the pathological condition existing in an eye that presents this interesting appearance with the ophthalmoscope; also if the diagnosis at the head of this report is correct.

ANOMALOUS ACTION OF NUX VOMICA AND STRYCHNINE.

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For many years I have used nux vomica, or its alkaloids, in atonic dyspepsia accompanied or not by irregular action of the heart and constipation of the bowels. As an attendant upon the old people in the Methodist Home for the Aged in this city, I often advise tinctura nucis vomicæ in the failing irregular heart of those in advanced years, either alone or in connection with tinctura digitalis and tinctura cinchonæ comp., and with pleasant results. It is likely that a course of treatment somewhat similar for the conditions named is very generally practised by medical men. It is not advanced as new or strange, but is mentioned to emphasize a condition of the heart occasionally following the use of nux vomica or strychnia, which I do not think is quite so well understood. I mean the production—particularly in the aged—of a very irregular action of an ordinarily correct or very fairly acting heart.

For instance, about three years ago I was called to prescribe for Mrs. S——, about sixty years of age, suffering from indigestion, cardialgia, flatulence, with eructations, etc. The heart was beating quite regularly, and there were no indications of valvular or other disease of the organ. I prescribed a mixture containing, pepsin, bismuth, syrup of ginger, mint-water, etc., with five drops of the tincture of nux vomica to the dose, to be taken

after meals. I was called again hurriedly after two or three doses had been taken, found the patient greatly distressed, respiration disturbed and rapid, and countenance suffused. Applying my ear to the chest, I found the heart in great commotion, contractions very irregular and indefinite, a part of the time intermittent, and again beating with great rapidity. My first thought was a mistake in the medicine, which was withdrawn and alcoholic stimulants substituted. After a few doses of brandy the patient improved, when I ordered small doses of digitalis, and left to visit the drug store to learn how I had written, and how the druggist had compounded, the prescription. To my astonishment I found everything evidently correct, and as I had intended it. My next visit to the patient, on the following day, was a pleasant one, the peculiar symptoms had nearly all disappeared.

The following day I gave again the medicine containing the nux vomica, with a partial return of the agitation of the heart, when the patient herself recognized the symptoms and stopped taking it. I attempted to give the same patient nux vomica on a subsequent occasion, but had to desist, when I set it down as an idiosyncrasy, and explained to the patient that if a strange physician was called to her, to say to him that she could not take nux vomica.

Another case of similar action in this case of strychnia was a gentleman, sixty-five years of age, convalescing from typhoid fever. He had suffered a second relapse, and had had a tedious illness, but had then been for over a week with normal temperature, when he complained of attacks of nausea and faintness whenever he moved or attempted to sit erect. I found his pulse intermittent and irregular. Examining the heart I found great weakness, irregularity, intermissions, etc.; countenance of the patient turgid, suffused, and with a look of extreme anxiety. I could find no cause for the symptoms in the condition of the patient, no complication other than the impending heart-failure, which I fought for days with stimulants of various kinds. Finally I remembered that as he made great objection to enema for his constipation, I had ordered, some days before, a small pill of aloin strychnia ($\frac{1}{60}$ of a grain) and belladonna, of which he was taking, one pill at night, with, occasionally, when his bowels did not answer to it, one morning and night. I withdrew this pill when I called to mind my former experience of a disturbed heart from nux vomica, and my patient rallied from his heart-failure, and has experienced no further trouble from it.

I have just now had a similar case. The patient, a woman, sixty-three years of age, was suffering with acute nephritis, followed with gastralgia, indigestion, constipation, and lastly, almost fatal heart-failure, accompanied with great irregularity, intermission of pulse, suffused purple face, etc. I remembered my other cases, and remembered also that I had been giving to this patient nux vomica with pepsin for her indigestion, and that now I was giving the aloin strychnia and belladonna pill for the constipation, both of which were at once withdrawn, with the abatement of serious heart symptoms and recovery of the patient.

ANTIPYRINE IN LOCOMOTOR ATAXIA.

DR. A. P. BUCHMAN, of Fort Wayne, Indiana, writes: "I have had under my care a case of locomotor ataxia in which the 'lightning pains' were unusually severe. The chest constriction was most agonizing. Fortunately, I gave a ten-grain dose of antipyrine, with the result of putting my patient at complete rest within an hour. Since then he keeps himself supplied with a quantity of ten-grain antipyrine capsules, and whenever, especially at night, the pains become annoying, one, or at most two, capsules secure a whole night's sleep. I began the use of the antipyrine about the first of March, and my patient has not missed a single night's rest since then."

Progress of Medical Science.

TROPHIC DISTURBANCES AFTER RESECTION OF JOINTS.—The following are the conclusions of Dr. V. Rochet, in a paper on this subject published in the *Revue de Chirurgie*, No. 5, 1888: 1. Trophic disturbances of different kinds, and affecting the skin, the muscles, the vessels, and the temperature, have been observed in the corresponding limb after resection of a joint. 2. Some of these disturbances are serious, and compromise more or less the utility of the limb; others are less severe, and for the most part curable. The former have been observed after traumatic resections in military practice, and, speaking generally, after resections effected by imperfect operative procedures, and accompanied by serious technical faults; the latter occur only after well-performed subperiosteal resections practised in cases of disease. 3. Trophic disturbances may occur after other plans of treatment, as immobilization associated or not with counter-irritation and amputation. 4. A well-performed resection is not in itself responsible for the occurrence of these disturbances. Most of these existed before the operation, and are the results of the primary lesions, whether osseous or articular, which necessitated operative interference. 5. The trophic disturbances are to be attributed to two main causes: (*a*) Immobilization of the limb, particularly when effected by bandaging; (*b*) direct or reflex influence of the nervous system. 6. These disturbances undergo, in the long run, a different evolution, according to the nature of the case and the two forms of resection (traumatic and pathological). It would seem on first consideration that the results ought to be better after all traumatic resections, because, apart from the operation, the vitality of the limb had not been impaired in consequence of antecedent lesions. This is really the case when the injury has not caused too much disorder, and when the resection has been properly performed; but frequently, as has been proved by Gurlt, important arteries and nerves have been divided by the original injury, the surgeon has committed serious faults in his operation, or the after-treatment, so important in such cases, has not been properly carried out, and that consequently incurable trophic disturbances have been developed. After a well-performed resection for disease such deplorable results do not occur; on the contrary, the operation has on such cases a most favorable influence. Muscular atrophy, the importance of which is so great with regard to the future utility of the limb, and on which most of the other troubles depend, is very much ameliorated by the operation, unless this condition is too far advanced in consequence of the influence of lesions that existed before the operation. 7. This favorable result of resection performed under the above-mentioned conditions is due to the fact that such an operation removes the two causes of the trophic disturbances; it arrests the inflammatory phenomena and restores the functions of the limb. 8. This last result will be much aided by careful after-treatment, and particularly by willing co-operation on the part of the patient. Methodical exercise of the joint and repeated active movements will do much more than electric currents, massage, and rubbing, which, however, are useful auxiliary means.—*London Medical Recorder.*

HEART-SOUNDS WHEN THE BREATH IS HELD.—In a communication to the *British Medical Journal* Dr. J. M. Granville cautions practitioners against what he believes to be a not uncommon source of error in connection with certain conventional modes of examining the heart. The patient is told to "stop breathing." This he does with a more or less forcibly inflated lung, the result being that the contact and impulse elements of the heart-sounds—and we too often forget how large these elements really are—become exaggerated. In addition to this, the lung being not infrequently distended by a very deep inspiration, taken hurriedly at the moment when the patient is told to

"stop breathing," the mechanical obstacle offered to a free passage of blood through the vessels of the lung is especially great. What the listener hears when the patient's breath is held will not be the cardiac sounds, simply unmasked by the suspension of the pulmonary sounds, but the former exaggerated and distorted by the accidental physical conditions of the lungs and the heart, and their surroundings in the thorax; which conditions are abnormal, for a state of forced, or even fixed, inspiration is not normal, and it *modifies* as well as intensifies the heart-sounds sensibly, as any close observer may detect. The very frequent appearance in the consulting room of cases of supposed heart disease, in which, when examined under ordinary conditions, nothing can be discovered to support the hypothesis of disease, may perhaps be to some extent accounted for by the method of examining to which he objects. Another point of moment is the position of the patient. Dr. Granville does not think any physician is justified in affirming the existence of a morbid state until, or unless, he can satisfy himself that the known effects of change of position on the several performances of the cardiac mechanism are produced. It is a matter of very great concern that the number of persons living lives of misery because they have been told that "there is something wrong with the heart" is of late largely increased and increasing; while no inconsiderable proportion of such persons have, in fact, nothing whatever the matter with their hearts beyond, perhaps, some sympathetic disturbance. He is not thinking of the scare produced by "anæmic" sounds, which, by the way, are too often misconstrued even by expert and experienced examiners, but of hypothetical "valvular disease" in hearts which are in no way organically affected, or even the subjects of exceptional muscular debility.

Heredity and Alcoholism.—The Paris correspondent of *The Lancet* refers to a thesis lately submitted by Dr. F. Combemale to the Faculty of Montpellier for the doctorate. It is entitled "La Descendance des Alcooliques," and is divided into three parts. In the first the author studies heredity—"this biological law which, in concert with adaptation, under the guise of transformation, explains the greatest number of physical or psychical facts, physiological or pathological, which one meets in the study of the generation of individuals, of families, of races, and of species." He then sketches the physiological and pathological effects of alcoholism on the individual and on the race. "Alcoholism," he says, "whether it be acute or chronic, exercises on the organism effects manifesting themselves symptomatologically by the diminution of vitality, premature aging of the organs, ending anatomically in premature organic decay by steatosis of the parenchyma or by irritative processes of the serous membranes." But, says the author, its effects do not stop here; heredity transmits temporary or durable characters which a person acquires by abusing, accidentally or habitually, alcoholic drinks. The descendants of inebriates will acquire from their parents, if they are procreated or conceived during a state of intoxication, nervous or physical troubles; and, if they are procreated or conceived during a state of chronic alcoholization, physical or mental alterations in relation with the organic degree of this alcoholization. As to the mechanism of the action of alcoholism, this, according to the author, is explained by the lesions or morbid modifications which the generative organs undergo in all the stages of alcoholism, the greatest effect of maternal alcoholism involving the most intimate connections which bind the product to the mother. The effects of alcoholism on progeniture are treated of in the second part of Dr. Combemale's thesis. Alcoholism of parents, he says, might act on the body and on the health of the descendants in producing deformities, in modifying the exterior characters of the individual, in diminishing his degree of resistance to disease, in producing sterility. It may also and principally act on the intellectual state of descendants, either in producing constitutional states, idiocy, anomalies of the faculties of the mind (will, passion, intelligence), or in producing functional states (mental alienation, delirium, etc.). Dr. Combemale concludes his thesis by a study of the descendants of alcoholic subjects from a medico-legal point of view.

Infectious Jaundice.—Dr. W. P. Vassilieff contributes to the *Ejenedêlnaya Klinicheskaya Gazeta* of St. Petersburg an interestng article on "Infectious Jaundice," founded on observations made in the Alexandrovski Military Hospital in 1883. There were eleven cases, at first somewhat puzzling, of an acute infectious disease, which has recently been described under several different names —typhus hépatique, nephro-typhus biliosus, typhus abortivus cum ictero et nephritide, morbus sui generis, etc. This disease is usually met with as a sporadic affection. There is fever very often at the beginning, then enlargement of the liver and spleen, jaundice, and kidney trouble. The disease usually terminates favorably. From the histories of the eleven cases given by the author it is clear that it is an acute general affection, which commences suddenly with a chill. In some patients nausea, and even vomiting, occurred, after which there were general debility and severe pains in some of the joints, often also in the muscles, especially those of the lower extremities; the appetite was usually bad at the beginning; sometimes there was very great thirst; the patients generally slept badly, and frequently suffered from delirium. When the cases were seen early the temperature was found to be high, the pulse soft and rapid; the tongue was moist and slightly coated; the skin hot and dry. At the beginning there were usually observed enlargement and tenderness of the liver and spleen. Albumen and sometimes casts were found in the urine; also, when there was jaundice, bile-pigment. The lungs sometimes were affected slightly (with bronchitis); in two cases pleurisy occurred. The bowels were usually constipated at the beginning. Later on they were sometimes relaxed, the motions generally being colorless. Frequently at the commencement, and sometimes throughout the whole illness, there were attacks of epistaxis; occasionally also herpes labialis occurred. No micro-organisms could be detected in the blood. The patients, especially when they were admitted in an early stage of the disease, gave the impression of great prostration, but after some days this passed away, and they began to get better. The temperature generally fell about the eighth day, sometimes as early as the seventh, at others as late as the eleventh; sometimes there was a second rise of temperature, which did not usually appear to affect the patient much. Although the disease was of such short duration, the patients after the temperature had fallen appeared to be extremely weak, and regained strength somewhat slowly. Although Dr. Vassilieff has only recorded eleven typical cases, he has from time to time had an opportunity of observing others of a similar character in the hospital. One of these proved fatal; at the post-mortem examination extravasations of blood were found on the serous and mucous membranes, and slough of the mucous membrane of the pharynx. Thirty-six other cases have been described by Landouzy, Mathieu, Weil, Goldschmidt, Wagner, Roth, Aufrecht, Fiedler, and Haas; at least, Dr. Vassilieff has come to the conclusion that his cases and theirs are all examples of the same affection. This disease is met with chiefly in the summer, and nearly always affects working-men, only three cases being on record where the patients were women. It occurs in different parts of Europe in the form of a sporadic, acute, feverish affection, with severe nervous symptoms, and with enlargement of the liver and spleen, functional kidney disturbance, jaundice, and pains in various groups of muscles. In Dr. Vassilieff's opinion, it bears most resemblance to the bilious typhus met with in Egypt and Smyrna and described by Drs. Kartulis and Diamantopulos, and it appears to be a disease *sui generis*, differing from recurrent bilious typhus.—*Lancet*, Dec. 1, 1888.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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A NEW METHOD FOR THE ARREST OF CANCER.

DR. J. INGLIS PARSONS contributes an article to the *British Medical Journal* of April 27th, entitled "Arrest of Growth in Four Cases of Cancer by a Powerful Interrupted Galvanic Current." Dr. Parsons writes in a candid and scientific spirit, and his observations are likely to arouse attention.

Dr. Parsons has a theory that, in cancer, the normal tissue-cells have escaped from the inhibitory control of the nervous system, and hence proliferate. His reasoning is interesting, and is as follows:

"First, with regard to the nature of cancer. The earliest pathologists regarded it as a dyscrasia, or altered constitution of the blood; then followed the embryonic cell theory; finally, the microbe was made to bear the burden of further misdeeds.

"Virchow, with his dogma, '*Omnis cellula e cellulâ*,' demolished the first. The second, propounded chiefly by Cohnheim, will not account for all tumors, even if it be admitted as possible that embryonic tissue can remain for a quarter to half a century in the human tissues, without partaking in the changes undergone by other cells in the body. Third, all attempts to find the microbe have failed.

"The hypothesis now brought forward is founded on the fact that all the cells of the body possess a latent capacity which enables them, under various stimuli, to proliferate and form new tissue. Under normal conditions, this capacity remains dormant, or is only exercised to the extent of keeping pre-existing structures in a living condition. But let an injury or irritation to some part of the body occur, and this latent capacity ceases to be dormant, and an active formation of cells takes place, until the injury is repaired or the irritation removed. Now, this formation of new tissue is essentially a new growth, although not a tumor. The capacity for forming it is common to all the tissues of the body, and it ceases when the necessity for its continuance has disappeared. This appears to show some controlling influence, probably by the nervous system. Is it not, then, possible that all tumors are in the first instance composed of cells formed in the normal process of repair, but that, having escaped from the control of the nervous system, they take an independent life, and continue to proliferate and develop without check, just as all living cells are capable of doing *ad infinitum* under favorable conditions?"

One out of several objections which might be raised to this view is that, according to it, cancer ought to develop in parts of the body deprived by accident or disease of their nervous supply. That this is not the case we know, and it can only be said in reply, that one cannot entirely remove nerve-influence from any part without also entirely cutting off the vascular supply.

Whatever be the theory, Dr. Parsons reports his cases, in which, practically, some interesting results were obtained. Three of the patients suffered from cancer of the breast, one from cancer of the cervix uteri. One of these is reported eight months, one six months, and two three months after the treatment. In all quiescence of the previously active cancerous growth was secured. The technique of the operation is as follows: The patient is anæsthetized; the current is then passed through the tumor and all the tissues for some inches round it by means of fine, insulated needles, so as not to injure the skin. A battery of seventy cells with an electro-motive force of 105 volts is used; the intensity of the current to commence with is 10 milliampères, gradually increased to 600 milliampères, and flashed through the growth in every direction from fifty to one hundred times, according to circumstances. The pulse and respiration were carefully watched. One out of the four cases treated, a woman aged sixty-three, with extensive carcinoma of the left breast, a presystolic *bruit*, and weak, intermittent pulse, was unable to stand more than 250 milliampères, and for this reason: when the current is applied to the left breast electrical stimulation of the heart occurs, and if this organ is healthy, an increase in the strength of its contraction appears to take place after its passage; but with the patient who had cardiac disease the improvement only continued up to a certain point, and then the intermittency increased and great irregularity occurred.

IS CHLOROFORMING BY GAS-LIGHT DANGEROUS?

IN estimating the comparative merits of different anæsthetics, it is very important that we should determine in how far the disastrous accidents, which sometimes occur during the administration of these agents, are due to the conditions under which they are used, and in how far to the peculiar effect of the anæsthetics themselves. In the *Berlin. Klinische Wochenschr.*, February 25, 1889, the question was raised, whether injury can result from the burning of illuminating gas in the chamber in which chloroform is administered. A number of interesting communications on the subject were received by the editor (*Berlin. Klin. Woch.*, March 11, 1889, page 219, and April 1, 1889, page 291), who publishes extracts from them, with the remark that Langenbeck had already observed that "operations by gas-light may become dangerous from the formation of the irrespirable compound $COCl_2$ during the vaporization of the chloroform." The first extract is from Dr. Stobwasser, who states that chloroform seems to form with the gases of combustion a product, which, when inspired, has an extremely unpleasant influence upon the mucous membranes of the respiratory tract, causing irritation of the larynx and trachea, a strong desire to cough, and finally headache. These symptoms appear often half an hour after an operation with gas-light has begun, and disappear only when the person affected passes into another room.

Dr. Iterson writes that, in the past winter he repeatedly observed severe and sudden asphyxia during narcosis in the operating-chamber of a small, new, private hospital, in which on cold days gas was burned to heat the room. When a larger stove was procured and gas was no longer used, anæsthesia was always normal. He had one death, which he ascribed to the combination of chloroform vapors with the combustion gases.

He had just reduced *en masse* a strangulated hernia, in a low chamber, by gas-light, when the patient, who had already returned to consciousness and spoken quite clearly, suddenly ceased to breathe and became cyanotic. All restorative measures were tried in vain. Dr. Fischer says that in his operation-chamber there is a well-constructed gas-lamp, which never vitiates the air when chloroform is not used. During the administration of chloroform in large operations, he observes that, at the end of the first half-hour, one of the attendants begins to cough, and then another, until all present, physicians and nurses, are affected. Besides this strong tendency to cough, which becomes ever stronger, a sense of oppression is felt in the head, then headache, dizziness, etc., and even repeated vomiting appear, and the air, especially about the lamp, seems full of a whitish vapor. These symptoms disappeared on return to the fresh air, but the secretions of the nose and throat were increased, and a subjective unpleasant smell remained for some time. So far, it is not known whether the patient suffered from the bad air or not, as his symptoms after the operation could be attributed to the narcosis. Dr. Hartman mentions similar results in chloroforming under petroleum light, speaking especially of the whitish vapor, which condensed upon his eye-glasses. Ventilation of the room prevented these phenomena.

The above citations indicate clearly a source of danger under the conditions mentioned, of which operators should beware.

The effect upon the patient is interesting. While under anæsthesia, it seems, he is not visibly affected by the vitiation of the atmosphere so evident to the attendants. Sudden asphyxia may, however, supervene, either while he is still narcotized, or when, on recovery from narcosis, the soothing influence of the chloroform is withdrawn from the nervous centres and the respiratory organs.

Whether the deleterious product is formed by the burning of the chloroform vapor, or by combination of the chloroform vapor with the matters formed by the combustion of the illuminating gas, is a question which requires further investigation.

HOSPITAL SURGEONS AND PAYMENT FOR OPERATIONS.

Dr. Henry J. Bigelow, of Boston, has undertaken to show that hospital surgeons should never receive money from patients for operations done in the hospitals they visit. His reasons are that the hospital is a charity, and should be kept as such; and next, that the hospital surgeon is sufficiently paid in *éclat* and experience.

No doubt Dr. Bigelow is right so far as purely charity hospitals are concerned. A surgeon has no right to allow the benevolent public to pay for the board and nursing of patients, while he receives their money in return for the exercise of his surgical skill.

This view, we think, would not be denied by anyone. But in fact, most of our free hospitals have rooms or wards for which patients pay a sufficient sum to give the hospital a handsome margin of profit. The charity element is here eliminated, and Dr. Bigelow's argument is not worth a straw.

It may be true that hospital surgeons are amply rewarded for their services by the *éclat* and experience they gain. It is a curious spectacle to see a physician complaining that his colleagues are getting too much reward for their labor, and arguing for its curtailment. And we are surprised to hear arguments logically so weak and shallow as those raised by Dr. Bigelow, who asserts that "hospital offices would command a considerable premium in money from the best class of practitioners, were they annually put up at auction."

No doubt judgeships, bishoprics, presidencies of various kinds would command premiums in money if put up at auction; but this does not prevent us from paying men who hold such positions suitable rewards for their services.

Dr. Bigelow seems to have in mind a desire to prevent the abuse of hospitals by their drawing cases from the outside practitioner; and he certainly hits at an abuse, though his remedy is one we think likely to increase rather than abate it. If hospital surgeons use their institutions for the purpose of enabling them to do operations more cheaply than those not having hospital facilities, they will do an injustice and an injury to the profession. As a matter of fact, however, patients now who go as pay patients to a hospital, and at the same time fee the surgeon for his operation, may be put to much greater expense than if they were treated at their homes.

THE GROWTH OF THE CHILD'S MIND.

In the last volume of the "Education Series," on "The Development of the Intellect," Mr. H. W. Brown has presented a conspectus of the observations of Professor Preyer on the mind of the child. This conspectus shows chronologically the gradual development of the senses, intellect, and will of the growing child, and presents in a condensed form the result of a great number of careful observations. Many of these results are already well known, but the presentation of them in a systematic and complete way has not heretofore been done.

It is recorded that sensibility to light, touch, temperature, smell, and taste, are present on the first day of infant life. Hearing, therefore, is the only special sense which is not active at this time. The child hears by the third or fourth day. Taste and smell are senses at first most active, but they are not differentiated. General organic sensations of well-being or discomfort are felt from the first; but pain and pleasure, as mental states, are not noted till at or near the second month.

The first sign of speech in the shape of utterance of consonant sounds is heard in the latter part of the second month; these consonants being generally "m," "r," "g," or "t." All the movements of the eyes become co-ordinate by the fourth month; and by this time the child begins to have the "feeling of self," *i.e.*, he looks at his own hands,

and looks at himself in the mirror. The study of the child's mind during the first year shows conclusively that ideas develop and reasoning processes occur before there is any knowledge of words or of language; though it may be assumed that the child thinks in symbols, visual or auditory, which are clumsy equivalents for words. By the end of the year the child begins to express itself by sounds, *i.e.*, speech begins. The development of this speech capacity is, according to Preyer, in accordance with the development of the intellectual powers. By the end of the second year the child's power of speech is practically acquired.

Professor Preyer's most striking and important conclusion, in his own opinion, is that the normal infant can form concepts and perform logical operations without the aid of words, or gestures, or symbols of any kind. He also shows what was known before, that the infant understands spoken language before he can produce the sounds he hears; and finally that the child, before he begins to speak, forms all the sounds that occur in his future speech. Professor Preyer thinks that by his observations he "has bridged over the only great gulf between the child and the brute animal."

The learned Professor does not believe in stimulating the infant imagination by fairy stories or religious myths; but he believes in "Æsop's Fables," and has his son repeat one to him every morning. Such are some of the advantages of being the son of a physiologist.

THE RAPID CURE OF CYSTITIS IN WOMEN.

In view of the fact that this disease is not only very rebellious to treatment, but also occasions at times an amount of suffering, mental and bodily, unequalled by any other infirmity to which the human body is subject, Dr. Madden (*Brit. Med. Jour.*, March 2, 1889) suggests, without apology, an improvement in its treatment which, in his experience, has generally wrought a rapid cure.

Cystitis may, as is well known, be relieved by simple general and local treatment, such as the treatment of dis ease of adjacent parts, the correction of uterine displacements, the relief of renal disease or morbid conditions of the urine. In uncomplicated cystitis warm baths, irrigation of the bladder with soothing fluids through a double catheter, rest in bed, diluent drinks, small frequent doses of Dover's powder, and boracic acid in ten or fifteen grain doses, three times a day, are very useful for the relief of the distressing symptoms. In well-established cystitis, however, more radical treatment is necessary. The method introduced by Emmett, of drainage through an incision through the vesico-vaginal wall, is unsatisfactory, because it is difficult to keep the fistula open, because the irritation of the button is often objectionable, and because a permanent vesico-vaginal fistula, with all its attending evils, may be left.

Dilatation of the urethra for persistent cystitis is a method well known, and of much value in mild cases, but in severe cases it is insufficient alone to produce a cure.

Dr. Madden dilates the urethra with an instrument until he can pass the index-finger into the bladder, and so paralyzes, for a time, the sphincter. It may be necessary to remove the proliferating mucous membrane of the bladder with a dull wire curette. After dilatation, whether the curette is used or not, he makes in all cases local applications of carbolic acid to the mucous surface of the bladder. He applies the carbolic acid in the form of the glycerine of carbolic acid (B. P.), which is quite strong enough. Through his dilator, a bit of absorbent cotton saturated with this preparation is introduced, so that the medicament, without touching the urethra, is brought into contact with the fundus vesicæ. It is allowed to remain there about two minutes, until every part of the vesical wall contracts firmly upon the cotton. The cotton is then withdrawn, and the urethral canal is similarly brushed out with another application of the carbolyzed glycerine. Pain is prevented by the previous application to the parts of a solution of cocaine (ten per cent.). According to his experience, this treatment seldom requires to be repeated more than two or three times, at intervals of a week, to effect a cure of even the most aggravated cases of cystitis in women.

INCREASE OF INSANITY.

At the last meeting of the California Medical Society Dr. J. W. Robertson, of San Francisco, read a paper in which he denied the excessive increase of insanity coincident with higher civilization, and also the importance of the hereditary element. He stated that the records of the Napa Asylum embraced 4,280 cases of insanity, of which 213, or only five per cent., were attributed to hereditary influence. Of the whole number recorded at Napa, 2,700 were males, only 33 of whom were professional men, and only 230 who could be regarded as belonging to the educated classes; 450 were classed as artisans, and the remaining 2,000 were laborers or without active occupation, and very largely of foreign birth. It was stated in the report that, "a large foreign population and a large insane population go hand in hand; and the foreigners in this State (California), who constitute one-third of the population, furnish two-thirds of the insane." Dr. J. H. Brainard, of Los Angeles, stated that he had examined the record of some 8,000 cases of insanity with reference to the influence of education or brain work, and he found that the professions had but a very small representation, the laboring classes being in the proportion of ninety per cent. Against this must be placed the fact that among the seventeen millions engaged in gainful occupations, considerably less than one-fourth could be classed among the professions, or in occupations requiring any high degree of education or mental strain. So that the Napa Asylum statistics really refute the very point attempted to be made. The negro race has 1 insane to every 1,097, the whites 1 to every 505.

A New Hospital Society.—The Society of the Alumni of Charity Hospital held its first regular meeting, Tuesday evening, May 7th. The officers are as follows: *Presiaent*, Dr. Ramon Guitéras; *Vice-President*, Dr. C. W. Stimson; *Treasurer*, Dr. Granville M. White; *Secretary*, Dr. W. L. Baner. The Society already numbers between forty and fifty members. Charity graduates who desire to join should communicate with Dr. Walter L. Carr, 54 West Thirty-eighth Street, Chairman of the Committee on New Members, giving date of their term of service in the hospital.

News of the Week.

An International Congress of Medical Jurisprudence, under the auspices of the Medico-Legal Society, will be held at Steinway Hall, New York City, on Tuesday, Wednesday, Thursday, and Friday, June 4, 5, 6 and 7, 1889. Morning sessions commence at 10 A.M., and afternoon sessions at 2.30 P.M.

The Medical Society of New Jersey will hold its one hundred and twenty-third annual meeting in the Coleman House, Asbury Park, on Tuesday and Wednesday, June 18 and 19, 1889, commencing at 4 P. M. on Tuesday.

The American Laryngological Association.—The Eleventh Annual Congress of the American Laryngological Association will be held at Washington, D. C., May 30, 31, and June 1, 1889. A large number of interesting and valuable papers are promised.

The annual meeting of the Association of Medical Superintendents of American Institutions for the Insane will be held at Newport, R. I., June 18th next.

Death in a Cataleptic State.—A considerable amount of discussion and sensational writing has been excited by the recent death of the so-called mind-reader, Mr. W. I. Bishop. It is stated that he was suddenly attacked with catalepsy, and very soon died in this condition. An autopsy was performed within six hours. It has been claimed by relatives that it was illegal to do this so soon after death, and, furthermore, that the patient was not really dead at the time. This latter statement may be dismissed as utterly preposterous and absurd. The tests of death are too exact and absolute at the present time to allow of the possibility of such an occurrence at the hands of intelligent physicians. The early performance of the autopsy without the relatives' consent was, we believe, technically illegal, although done with the best intentions. Perhaps some mistake was made in giving out that the death occurred from catalepsy. Such a statement is at least misleading, for catalepsy is but the name for a few peculiar symptoms, and has no claim to be considered a specific disease any more than has headache or hysteria.

The Work of the German Surgical Congress.—The first day was occupied by Professor Esmarch with an address on cancer. On the second day of the Congress the subject of Professor von Esmarch's lecture was discussed, and a most interesting case of myxœdema was shown, in the discussion of which a prominent part was taken by Mr. Horsley, of London. Dr. Bramann, of Berlin, showed three little boys suffering from symmetrical gangrene, and spoke on the cases. Schinzinger, of Freiburg, caused a sensation by proposing to secure a permanently good result of operations for carcinoma mammæ in young patients by extirpating the ovaries, and thus producing premature atrophy of the glandular tissue of the breast. After communications from Sendler, of Magdeburg, regarding an angioma cavernosum pendulum observed on the mamilla, and from Helferich, of Greifswald, on partial resection of symphysis for removal of a vesical cancer, König, of Göttingen, exhibited calculi produced in the kidneys of dogs by feeding them with oxamide. The morning sitting was concluded by a report from Krause, of Halle, of von Volkmann's method of treating resections of the hip-joint. The afternoon sitting was opened by a lecture from Thiersch, of Leipsic, on excision of nævus. The next speaker was Angerer, of Munich, who spoke on the diagnosis and operative treatment of stenosis of the pylorus. Lauenstein, of Hamburg, gave his own experience on the subject, and the sitting was closed by a lecture from Schlange, of Berlin, on ileus. On the third day, Wehr, of Lemberg, reported on the inoculation of cancer from one dog to another; Schmidt, of Stettin, showed a man whose larynx was totally extirpated two years and a half ago, and who is now well and able to speak intelligibly; Kümmel, of Hamburg, expounded a new osteoplastic operation on the foot; Oppenheim, of Berlin, showed five workmen suffering from traumatic neurosis; Krause, of Halle, spoke on two cases of acute catarrhal suppuration of joints; Petersen, of Kiel, on arthrodesis; Lauenstein, of Hamburg, on total extirpation of the knee-joint; Krause, of Halle, on the treatment of scaly sarcoma; Riedinger, of Würzburg, on malformations of joints; Rydygier, of Krakow, on the suppuration of the inner parts of the nose; Trendelenberg, of Bonn, on the treatment of flat feet and crooked noses; Fischer, of Breslau, on trephining for brain tumors; Höftemann, of Königsberg, on rare cases of trephining; and Gerstein, of Dortmund, on the closure of perforations in the skull. Küster, of Berlin, also spoke on the last subject, and Horsley, of London, on trephining. In the afternoon von Bergmann was re-elected President for 1890. Mikulicz, of Königsberg, communicated his experience in the operative treatment of perforative peritonitis, and was followed on the same subject by König, of Göttingen, who mentioned the extensive experience of American surgeons in this field, owing to the free use of the revolver in the United States. Leser, of Halle, then spoke of a singular case of actino-mycosis, and Pietrzikowsky on the relations of pneumonia to strangulated herniæ. Saturday, the last day of the Congress, was devoted, like the preceding ones, to a series of reports, lectures, demonstrations, and discussions on subjects of deep interest to surgeons, and of high moment to mankind.—*The Lancet.*

The Iowa State Board of Health has decided that Iowa medical colleges, after 1891, should be required to give a four years' course to secure their graduates admission to practice in the State.

Catalepsy in a Mother and Child.—A case was recently reported in the *Nederlandsch Tijdschrift voor Geneeskunde*, where a pregnant woman became cataleptic, her child suffering from the same affection. The patient was a robust woman, aged forty-four; she had borne eleven children. In youth she suffered from typhus, and after recovery became subject to fainting fits, but throughout her married life she remained strong and well. There was no history of any neurosis in the family. In the seventh month of her twelfth pregnancy she was seized with cataleptic fits, following the loss of a child. Dr. Schoot, of Leeuwarden, found her stiff and motionless. The forearm could be raised and bent with some force, and remained in the same position for about ten minutes, then it slowly fell. The lower extremities could be treated

in the same manner, with the same effect. Consciousness was lost. The pulse was 64, full and regular; the temperature normal; the respirations natural. The pupils, somewhat dilated, reacted to light. On inhaling chloroform the rigidity of the muscles disappeared, and the patient seemed to sleep calmly for four hours. On awaking from the fit the patient remembered nothing that had taken place while it lasted. The fœtal heart-sounds, previously audible, were lost, and not heard till fourteen days before labor. No albumin could be found in the urine. The cataleptic fits occurred about three or four times daily, sometimes there was an interval of two days. Atropine gave the patient a week's repose. The fits continued to term, when she was safely delivered of an apparently healthy boy. Not for four days later did the fits recur. On the fifth day an attack occurred while she was suckling; two days later another fit took place, but no more came on, and three months after labor she was quite well. Shortly after the first attack after labor the child, who had been weaned because of that attack, was seized with disphagia, and could hardly swallow cow's milk. In the evening it had a cataleptic fit. The symptoms were precisely the same as in the mother. The flexibilitas cerea of the limbs was marked. The muscles relaxed during a warm bath, but soon afterward tonic cataleptic convulsions occurred, and the child died after two days' duration of the fits. Dr. Schoot, after due consideration of the differential diagnosis of the case from eclampsia and hystero-epilepsy, came to the conclusion that the fits were cataleptic both in the mother and the child. That they were identical in each case there could be no doubt, but the precise relation of the affection in mother and child remained obscure.—*British Medical Journal.*

Prevention of Diphtheria.—The New York State Board of Health has issued a new circular on the prevention of diphtheria. It contains a statement of the facts now generally accepted regarding the contagiousness of diphtheria, and describes the methods of isolation and disinfection. We observe that sulphur fumigation is recommended, a measure which has apparently been shown to be futile and useless.

The Examinations for License to Practise in Minnesota.—Two years have now elapsed since the present law regulating the practice of medicine in this State went into effect, and the good work of the Board of Examiners has shown itself by the diminished number of quacks now parading their advertisements in the daily newspapers. Out of the ninety-four candidates who have presented themselves for examination up to the present time, thirty have been refused admission to practise.—*Northwestern Lancet.*

Ehrlich's Test for the Urine of Typhoid Fever has been already given in these columns, but at the request of several correspondents we give it again: The following solutions are made: *A*, a saturated solution of sulphanilic acid in dilute (1 in 20) hydrochloric acid; *B*, a 0.5 per cent. solution of sodic nitrite in distilled water. (Both of these solutions must be fresh—especially the latter, which cannot be depended on for more than a week at the longest. When they are mixed, of course, a solution of sulphanilic acid containing free nitrous acid is produced, which is the actual test solution; but on account of the extreme instability of the latter the two solutions must be mixed fresh at each testing.) In using the test, about twenty-five parts of *A* are added to one of *B*. Mix with this an equal bulk of the urine to be examined, and render alkaline with strong ammonia. With normal urine, the only change which ordinarily occurs is a mere deepening of its color to a sherry or vinegar brown. In conditions of pyrexia other than typhoid fever the color also deepens, but still remains merely brown, although usually it becomes of a darker tint than the average color given by normal urines. But when the test is applied to the urine of a patient with enteric fever, the color rapidly turns red, the exact tint it acquires varying from the yellowish-red of bichromate of potassium solution, though ruby red, to a rich port-wine color. On shaking the test-tube a froth is produced which has usually a delicate pink color that is characteristic. On allowing the mixture to stand twenty-four hours the phosphates precipitated have an olive-green tinge. Dr. Howard Taylor, in reporting his experience with this test, evidently is unaware of the importance of this olive-green precipitate.

The Etymology of a Familiar Word.—A correspondent of the *Journal of Cutaneous and Venereal Diseases* writes: "A member of the bar, distinguished alike for his eminence as a jurist and his profound general erudition, gave me recently the etymology of a familiar word that few can correctly spell, and still fewer can trace to its origin. He said the Roman diminutive *ette* contracted to *et* abounds in such words as streamlet, a little stream; rivulet, a little river, etc.; while the Saxon diminutive *ock* serves a similar purpose in such words as hillock, a little hill, and bullock, a little bull, and plural, bullocks, little bulls. So it appears at last that the familiar name by which the schoolboy calls his testicles does not belong to the realm of slang, but descends to us straight from the shelves of mediæval classics."

Dr. Harrison Allen, of Philadelphia, is to deliver the next Toner lecture at the National Museum in Washington, on the evening of the 29th inst. The subject is "The Clinical Study of the Skull, Especially Undertaken in Connection with the Morbid Conditions of the Jaws and Nasal Chambers."—*Boston Medical and Surgical Journal.*

The Hospital Graduates Club gave its fourth annual dinner at the Hotel Hungaria, May 16th. The anniversary address on the natural history of the Hospital Interne was delivered in his usual and felicitously humorous style by Dr. J. S. Hawley. The president, Dr. A. B. Townshend, acted as toast-master. Speeches were made by the following invited guests: Drs. Geo. F. Shrady, D. B. St. John Roosa, R. F. Weir, Frank P. Foster, T. R. Pooley, Geo. H. Fox, R. W. Amidon, Clement Cleveland, Charles I. Pardee, D. Bryson Delavan, L. A. Rodenstein, and others. The club is in a prosperous condition, holding monthly meetings at which scientific papers are read.

The Trustees of the Jefferson Medical College have elected Dr. William W. Keen to the Chair of Principles of Surgery and of Clinical Surgery, rendered vacant by the death of Dr. Samuel W. Gross.

Reviews and Notices of Books.

A Text-book of Pharmacology, Therapeutics, and Materia Medica. By T. Lauder Brunton, M.D., D.Sc., F.R.S., Fellow of the Royal College of Physicians; Assistant Physician and Lecturer on Materia Medica at St. Bartholomew's Hospital; Examiner in Materia Medica in the Universities of Oxford and of London; Late Examiner in the University of Edinburgh, in the Victoria University, and in the Royal College of Physicians, London. Adapted to the United States Pharmacopœia, by Francis H. Williams, M.D., Boston, Mass. Third Edition. Philadelphia: Lea Brothers & Co. 1888.

No words of praise are needed for this work, for it has already spoken for itself in former editions. It was by unanimous consent placed at once among the foremost books on the subject of which it treats, and which was ever published in any language, and the better it is known and studied the more highly it is appreciated. The present edition contains much new matter, the insertion of which has been necessitated by the advances made in various directions in the art of therapeutics, and it now stands unrivalled in its thoroughly scientific presentation of the modes of drug action. No one who wishes to be fully up to the times in this science can afford to neglect the study of Dr. Brunton's work. The indices are excellent, and add not a little to the practical value of the book.

Manual of Chemistry. A Guide to Lectures and Laboratory-work for Beginners in Chemistry. A Text-book specially Adapted for Students of Pharmacy and Medicine. By W. Simon, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons; Professor of Chemistry and Analytical Chemistry in the Maryland College of Pharmacy, Baltimore, Md. Second Edition, thoroughly Revised and greatly Enlarged. With forty-four Illustrations and seven colored Plates, representing fifty-six Chemical Reactions. Philadelphia: Lea Brothers & Co. 1888.

In this book the author has endeavored to meet the wants of the student of medicine or of pharmacy in regard to his chemical studies, and he has succeeded in presenting his subject so clearly that no one who really wishes to acquire a fair knowledge of chemistry can fail to do so by the help of this work. The manual is divided into seven parts, treating of the fundamental properties of matter, the principles of chemistry, and of the metallic and of the non-metallic elements and their compounds. The remaining sections are devoted to analysis, to organic, and to physiological chemistry. The largest section in the book is naturally that devoted to a consideration of the carbon compounds, or organic chemistry. An excellent feature is the introduction of a number of plates showing the various colors of the most important chemical reactions of the metallic salts, of some of the alkaloids, and of the urinary tests. In the part treating of physiological chemistry the section on analysis of the urine will be found very practical, and well suited to the needs of the practitioner of medicine.

The Dispensatory of the United States of America. By George B. Wood, M.D., and Franklin Bache, M.D. Sixteenth Edition. Rearranged, thoroughly revised, and largely rewritten. With Illustrations. By H. C. Wood, M.D., LL.D., etc.; Joseph P. Remington, Ph.M., F.C.S., etc.; and Samuel P. Sadtler, Ph.D., F.C.S. Philadelphia: J. B. Lippincott Co. 1888.

Over six hundred pages of new matter have been incorporated in the most recent edition of this admirable work, which has intrenched itself so thoroughly in the esteem of physicians and pharmacists alike. This of itself bears ample testimony to the thoroughness with which the exploration of recent pharmacological literature has been undertaken. In its improved condition the work cannot fail to maintain its position in the esteem of the profession.

A Manual of General Pathology. By Joseph Frank Payne, M.D., F.R.C.P., etc. Pp. 528. Philadelphia: Lea Brothers & Co. 1888.

As an introduction to the practice of medicine, Dr. Payne's book cannot fail to serve a useful purpose. The work is divided into two principal parts; the first treating of the processes of disease, and the second dealing with its causes. Besides these main divisions, which constitute the body of the work, there is an appendix devoted to the description of the most approved methods of examining bacteria. A large number of illustrations, many of which are exceedingly well done from wood, serve as useful adjuncts to the text.

Pictorial History of Ancient Pharmacy; with Sketches of Early Medical Practice. By Hermann Peters. Translated from the German, and revised, with numerous additions, by Dr. William Netter. Pp. xi., 184. Chicago: G. P. Engelhard & Co. 1889.

No one can read this interesting little volume without appreciating the enormous strides which have been taken in therapeutics, and particularly in internal therapeutics, a progress largely due, if not entirely due, to the gigantic acquisitions of chemistry. Truly the transition from the nauseous concoctions of the middle ages to the alkaloids of modern pharmacy is immense. The book is written in an attractive style, and is adorned with quaint old engravings illustrating the intricacies of ancient pharmacy.

Physical Development, or the Laws Governing the Human System. By Nathan Allen, M.D., LL.D., Member of the American Medical Association, the American Academy of Medicine, the American Public Health Association, the Massachusetts Medical Society. Boston: Lee & Shepard; New York: Charles T. Dillingham. 1888.

Dr. Allen has been a frequent contributor to magazines and journals, both lay and medical, during the past quarter of a century, the object of his articles being the wider diffusion of a knowledge of the laws of health and of the means of raising mankind to a higher plane of physical development. These essays had naturally been in great part lost sight of, being scattered through the pages of so many periodicals of old date, but have here been brought together in one volume. Most of them are of a very practical nature, treating, as they do, of the laws of longevity and of human increase, of heredity, the prevention of crime and of insanity, of education, sanitary science, consanguineous marriage, and many kindred topics. The author is an original thinker, and he has done a service to his fellows in putting these essays in a form where they are accessible to all interested in social improvements and reforms.

The Relief of Tympanites by Puncture of the Abdomen. By John W. Ogle, M.D., Consultant to St. George's Hospital. 4to, pp. 110. London: J. & A. Churchill. 1888.

The history of this operation is given, as is also the recital of many cases in which it has been done with beneficial results. The opinions are quoted of nearly all the leading English physicians and surgeons of the present generation. Dr. Ogle considers the procedure as positively indicated in many cases. A very fine cannula, thoroughly disinfected, should be used, and the operation should not be delayed too long.

Transactions of the New York State Medical Society for 1888. A handsome volume of nearly seven hundred pages, and a perfect mine of information relative to State medical matters.

SAUNDERS'S QUESTION COMPENDS, Nos. 2–5, inclusive. Philadelphia: W. B. Saunders. 1888.

We have already commented favorably on this series of students' manuals. They are arranged in the form of questions and answers, and are concise, without the omission of any essential facts. No. 2 is on Surgery, by Dr. Edward Martin; Dr. Charles B. Nancrede writes No. 3, on Anatomy; Dr. Lawrence Wolf No. 4, on Medical Chemistry; and Dr. W. Easterly Ashton No. 5, on Obstetrics. A handsome binding, good paper, and clear type increase their attractiveness.

OBSTETRICS, GYNÆCOLOGY, AND PEDIATRICS. By K. N. FENWICK, M.D., Professor of Obstetrics and Diseases of Women and Children, Royal College of Physicians and Surgeons, Kingston, Ontario. 8vo, pp. 251. Kingston: John Henderson & Co. 1889.

IN this work the author has incorporated the substance of his annual lecture-courses, with the usual additions and alterations necessary in such an undertaking. No claim is made for originality. The author's ability at systematic classification is worthy of praise, as well as his faculty of conveying considerable information in a few words.

HYSTERIA AND EPILEPSY. By J. LEONARD CORNING, M.D., etc., New York. 12mo, pp. 176. Detroit: George S. Davis. 1888.

THESE chapters have previously appeared in a less elaborate form in some of the weekly and monthly journals, but they have been elaborated, and now form a condensed, systematic treatise on the topics named. "Hysteria" occupies a little over one-third of the pages, the remainder of which contain observations on epileptic insomnia as well as a description of the general epileptic state. Concerning hysteria, the author notes its frequent occurrence in males, and the clinical evidence against its being regarded as invariably the result of genital derangement. He considers the symptomatology under the headings of psychical manifestations, sensory and motor disorders, and vaso-motor disturbances. Most of the phenomena may be accounted for on the supposition of exaggerated, diminished, or suppressed cortical irritation.

Epilepsy is considered according to the following classification: Grand mal; petit mal; epilepsy, with partial impairment of consciousness and circumscribed muscular spasm; and, lastly, irregular forms of the attack. Dr. Corning's work in neurology has been such as to command careful attention to all he writes, and we confess to a peculiar pleasure on looking over these pages. His theory of treatment by compression of the carotids is well known. Of the conventional bromides he prefers a mixture of the salts of potassium, sodium, ammonium, and lithium. For the epileptic insomnia he recommends full doses of the bromides and prolonged sleep.

THE CAUSATION OF DISEASE: AN EXPOSITION OF THE ULTIMATE FACTORS WHICH INDUCE IT. By HARRY CAMPBELL, M.D., B.S. (London), Member of the Royal College of Physicians, etc. 8vo, pp. 361. London: H. K. Lewis. 1889.

THE title of this book suggests the consideration of a very broad subject, and the author very successfully strives to meet the expectations of the reader. It is, indeed, a philosophical disquisition from beginning to end, general principles being discussed from the broadest and most comprehensive point of view. In keeping with the advanced doctrines of the day he is an evolutionist, in the strictest sense of the term, and a consistent disciple of Darwin, Huxley, and Herbert Spencer. With this understanding of his position the reader is prepared to follow him in the consideration of all those changes of the ages whereby man has evoluted to a more or less perfect animal, and to a comprehensive and thorough understanding of what is meant by the doctrine of the survival of the fittest. Naturally he takes, as the groundworks of application of this doctrine to the causation of disease, the prenatal influences affecting structural changes and their relations to the various environment of the individual. Consequently, as seen by his argument, there is no end to the changes in these regards which may be complementary to each other. Very properly, we think, he takes strong ground in favor of hereditary predisposition, and wisely suggests that this part of the study requires more examination than has heretofore been given it. The framework is laid for much elaboration on the part of the careful student, who, from practical observation, can fill in the gaps so suggestively given with great profit. But it is impossible to do more than sketch the scope of the work, it being sufficient perhaps to say that it is one well calculated to repay a careful perusal by anyone who wishes to obtain a comprehensively broad view of pure philosophical science as applied to the explanation of pathological processes.

THE OPERATIONS OF SURGERY: A Systemic Handbook for Practitioners, Students, and Hospital Surgeons. By W. H. A. JACOBSON, F.R.C.S., Assistant Surgeon, Guy's Hospital, London, etc. 8vo, pp. 990. Philadelphia: P. Blakiston, Son & Co. 1889.

THE volume is very modestly termed a handbook, although from its proportions and contents it lays more claim to being a treatise upon the general subject under consideration. Certainly it is the most complete of its kind that has come under our notice for several years. The arrangement of the topics is very systematic, the treatment of them is terse and practical, while the large number, (nearly two hundred) of illustrations help the reader at once to understand the real technique of the different procedures. The author proves himself to be a judicious operator, as shown by his choice of methods, and by the emphasis with which he refers to the different dangers and complications which may arise to mar success or jeopardize life. Altogether, it is a very good book for the younger and older practitioner, and can worthily hold its place in the first rank of works of its class.

ESSENTIALS OF PHYSICS AND CHEMISTRY. Written expressly for the use of Students of Medicine. By CONDICT W. CUTLER, M.S., M.D., Physician in Chief of the New York Dispensary, etc. Third edition. 12mo, pp. 296. New York: G. P. Putnam's Sons. 1889.

THIS is a manual treating, as its title indicates, of the essentials of physics and chemistry, and is well calculated for the student who may desire assistance in his quiz, or in his final examination for a degree. It is well arranged and very easy of reference.

THE PRINCIPLES OF CANCER AND TUMOR FORMATION. By W. ROGER WILLIAMS, F.R.C.S., Surgeon to Middlesex Hospital, etc. 8vo, pp. 194. London: John Bale & Sons. 1888.

THE chapters of this monograph treat successively of growth, reproduction, evolution of vegetable and animal neoplasms, and etiology. In the first two are elaborated general phenomena, as observed in the lower forms of animal and vegetable life.

In the third and fourth the general doctrine is laid down and defended that pathological new formations in plants and animals can be strictly interpreted in accordance with the doctrine of evolution. "Underlying this is the great principle that the evolution of pathological new formations is but a modified repetition of the normal evolution." All the foregoing chapters are freely illustrated with wood-cuts.

In the final chapter the deductions from the foregoing are brought down to an application; viz., a tumor is the result of the "genesis to excessive activity of certain lowly organized cells of the part determined by local excess of nutrition, the result of intrinsic or extrinsic stimuli."

It is a most interesting book to read, though not in any way suggestive of therapeutic measures except as to the most general good environment.

Society Reports.

THE AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in the New Army Medical Museum, Washington, May 14, 15, and 16, 1889.

FIRST DAY, TUESDAY, MAY 14TH—MORNING SESSION.

THE Association was called to order by the President, DR. DAVID W. CHEEVER, of Boston, who delivered the following address:

THE FUTURE OF SURGERY WITHOUT LIMIT.

Fellows of the American Surgical Association: I believe that we are warranted in saying that the future of surgery is without limit. I deduce this conclusion first from considering what the mind of man has already done; second, from the future possibilities of fields hitherto unknown and unexplored, but now opening up to science. There can be but two limitations—either in the mind of man, or in the subject.

Since the time when in the anthropoid the cerebral lobes first began to creep over and cover the cerebellum, what a growth has taken place in the penetrating power of the human senses! The brain has progressed from the rude hammer of the prognathous cave-dweller to the telescope and the microscope. Originally of vision far less acute than the eagle's, the eye of man ranges from the fixed star to the twenty thousandth of an inch bacteria. We analyze the sun's gases with the spectrum; we follow the magnet unerringly on the sea; we utilize the lightning; we count the vibrations of sound; we measure light; we speak across the ocean; we estimate the age of our planet; we analyze atoms; we compose new substances; we make pictures from light; we photograph and map the stars; we explore the pole and test the glacial history of the world; we find subterranean springs and light our homes from old volcanic sources; we measure the crevasses in the glaciers of Mars; we count tides by the moon; we defy the wind with steam; we foretell storms by the barometer; we construct isothermal lines; we inspect the bottom of the sea; we demonstrate eclipses; we measure space by the transit of Venus; we predict comets; we find a solar and a stellar unit of time; we unravel Egyptian chronology; we trace man downward through the stages of evolution. Man invents the wheel, the ship, the pendulum, the siphon; under the water, in and on the earth, in the air, in the infinity of space, in the infinity of microorganisms, the mind finds no limit, but is ever restless, ever searching. And now in medicine averting pestilence, annulling pain, destroying sepsis, shall we stop?

In gradual development the brain of man has gone on step by step, investigating itself, until we localize disease by the tracings on cerebral surfaces, and condense in that wonderful cortical substance a palimpsest of impressions, mental and material. The brain studies itself. Know thyself, said the Greek, and in searching the crypts of the human brain we may well echo the description of the greatest of the sons of men: "How noble in reason! How infinite in faculties! In apprehension how like a god!"

We pass now to the second limitation; in the subject itself. Long since was it said that all was found out in anatomy, and that surgery had nearly reached its limit. Far from this, the microscope has created a new anatomy and a new pathology; physiology changes yearly; the lower animals yield light by the Baconian test of experiment. Anæsthesia enlarged surgery; antisepsis emboldens surgery, and we can set no limits to the advance.

The three sacred cavities, the abdomen, which means the hidden; the thorax, which holds two feet of the tripod of life; the skull, which conceals the nerve-force, the vital principle—all are explored

Medicine, always obscure, is growing clearer, and instruments of precision have been applied to our art; the clinical thermometer is the tell-tale of internal changes, inflammatory or septic. What have we to fear? We advance haltingly, but we advance.

Specialism exhausts minute localities; by its occasional discoveries enlightens medicine; by its failures calls sometimes a halt. Specialism, tempered by general medicine, becomes a safe companion in our march onward.

It becomes us soberly to inquire how to study the new seats of surgical exploration. What new methods are needed; where must we be conservative; where can we be bold? Since medicine is composed of a science and an art, we must study the science to develop the art. The four pure sciences are anatomy, physiology, chemistry, pathology. These purely scientific portions of our profession are the only ones that can yield positive knowledge, and this only by dissections, experiments, and analyses.

Modern surgery deals with anatomical regions hitherto insufficiently studied. First, the *fasciæ*, the linings and bindings of the muscles, vessels, and nerves have great influence in determining the course of suppuration and the size and locality of abscesses. A perfect dissection and preparation of the fascia does not exist. It is, perhaps, impossible to make it. Frozen sections and their photographs give the best idea of the relations of the fasciæ. Familiar instances of the importance of the arrangement of the fasciæ are to be found in the psoas sheath; the saphenous opening; the triangular ligament of the perineum; the deep cervical fascia; the fascia lata; the fascia of the forearm and the annular ligament; the posterior ligament, or fascia of Winslow, in the popliteal space.

Next, the topographical anatomy of the viscera, especially in the abdomen, not only the variations in the reflexion of the peritoneum, but the mobility of the organs; the rhythmic changes produced by respiration on the veins, on the diaphragm as an agent of displacement, and on the pelvic diaphragm, the perineum; the incessant movements of peristalsis and its power to change the locality of organs; all these have not been sufficiently considered by the diagnostician and by the operator. Normal splanchnology and frozen sections of the abdominal cavity are of more worth to the student than the mnemonics of the origin of all the muscles, and the twigs of all the arteries. The exact relations of the mediastina to the œsophagus, aorta, pericardium, and pleural cavities are of great importance also.

No less directly useful is an exhaustive and minute topography of the brain, the bearings of falx tentorium, corpus callosum, ventricles, the centre of decussating fibres, the ultimate origin of the fibres of the cranial nerves, the sinuses, the relations of the middle ear, the petrosal sinuses, the mastoid cells and their variations, the fissures of Sylvius and Rolando.

When we consider physiology we are struck both by its great progress and by its imperfections. The older physiology is obsolete and discarded; but in the newer physiology the functions of some large and important organs are still undetermined. The ductless glands, for instance, the spleen, the thyroid, the thymus, the suprarenal capsules. An ignorance of their functions renders the surgeon unable to predict the consequences of their removal. Of what avail the brilliant operation to excise a double goitre, if it is to be followed by an obscure degeneration of the nervous or glandular systems? Again, in organs of known function, the limit of the digestive power of different portions of the alimentary canal is not yet definitely learned. How can we get along without a gall-bladder? How important is the pancreas? Can the duodenum supplant the stomach in nutrition? How much ileum can be removed without starvation? What will the rectum digest? All these are pertinent questions for the physiologist and have a direct bearing on modern surgery.

In chemistry the whole study of sepsis, antisepsis, fermentation, germicides, the viability of spores is in its infancy, and as certainly as it already has reversed surgical practice, will do so again and again.

The great desideratum of surgery now, if chemistry can supply it, is a new, constant, local anæsthetic. This would enable us to banish a chief cause of secondary shock from our operations.

Finally, in pathology we have much to learn and to influence our surgical practice. Diseased organs change appearance and they change place. A double puzzle is thus presented to the operator. On opening the abdominal cavity we are sometimes at a loss to locate an organ, and even fail to recognize it, so changed is its look and its surroundings. One part is mistaken for another; a sac for intestine; intestine for sac; adhesions for peritoneum, and so in many other instances. It is of the last importance that the operating surgeon should be so familiar with the pathological changes that he can distinguish the false from the true at a glance.

The future destiny of coarse pathological changes of organs, whether they are hopelessly diseased, whether they can recover, whether the affection is organic or inflammatory, is also to be decided rightly or wrongly by the surgical expert on a brief inspection.

Having considered how much we may learn or hope from the pure sciences, we pass to the other limitation of the subject, the arrest or the cure of morbid processes. All surgical disease is inflammatory or organic; we must advance by checking the inflammatory process, or by preventing morbid growths—the first, by averting suppuration; the second by discovering the causes of cell-changes, and cell-proliferation. Through surgical pathology lies the only path. True conservative surgery would then be limited to averting the consequences of traumatism. The earlier labors of Paget and the later ones of Virchow, Pasteur, and Koch, give us some hope of being able to abort suppuration, to inoculate for tubercle; or to eliminate the cancer cell. The abortion of inflammation is now much advanced by the progressing knowledge of asepsis. Pyæmia the opprobrium of surgery has been enormously reduced in frequency. When suppuration has occurred, evacuation, drainage, and antiseptics have been equally successful in shortening the pyogenic process and in promoting repair. In tubercle we see the best results follow the évidement of Sédillot, both in cancerous bone and in suppurating lymphatics.

As in variola, may we not hope that a modified germ may jugulate the tubercle bacillus by inoculation? or if we meet not the success which the modification of rabies is slowly attaining, that chemistry may give us a reagent to devitalize the germ of tuberculosis.

Cancer, to include under that term all recurrent tumors, is by Virchow's nomenclature a misplaced cell-growth. Modern research now gives us hope of finding the cause of this mal-development, and if a germ should be discovered here, a germicide will be finally found.

The manual part of our art, chirurgery, handcraft, requires also to be perfected in connection with the advancing boldness with which we open cavities and feel the pulse of life in its central shrine. New operations demand a new technique, new modes, new instruments, a new code of rules, all to be learned by experiment. Nowhere, perhaps, could the French saying, "jeur chirurgien, vieux medicin," be more applicable. It is to the young surgeon, born and bred in asepsis, that the older physician must look for progress in our art.

In estimating, then, the limitations of surgery, we find none, except they be set by ourselves. How should they be set? By conservative judgment opposed to rashness. In the list of modern and useful operations, as distinguished from the barely justifiable, are the following:

1. To remove growths or foreign bodies from the cavities of the body: Opening the brain; opening the spinal cord; displacement of the upper jaw, or of the nose, for naso-pharyngeal polypi; cutting into the pharynx from outside the neck, to remove tumors of the tonsil; œsophagotomy for foreign bodies; thyrotomy for growths; gastrotomy for foreign bodies; opening the gall-bladder for the removal of stones; opening the pelvis of the kidney for calculi; supra-pubic cystotomy for calculi and tumors of the bladder; ovariotomy; removal of the diseased uterus or its appendages; laparotomy for gun-shot wounds and for extra-uterine fœtation; excision of the lower part of the rectum for growths.

2. To reach and evacuate inflammatory products: Opening the chest and resecting the ribs, for empyæma; opening the abdomen for appendicitis or for chronic peritonitis; opening and drainage of pelvic abscesses, of abscess of the vertebræ; opening of deep abscess of the neck; evacuation and draining abscesses of joints; perinephritic abscess and removal of one kidney.

3. To relieve obstruction: Intubation and tracheotomy; gastrostomy and enterostomy; colotomy; perineal section; herniotomy.

4. To restore continuity: Resection and suture of bowel; resection and union of bone; resection and reunion of nerves; nerve-grafting; reunion of tendons and of muscles.

5. Unclassified procedures: Plastic and osteo-plastic surgery, modifications of orthopedics, including bone sections and excisions; litholapaxy; reduction of dislocation of the hip and of the shoulder by applied anatomy; endoscopy; rhinoscopy and removal of turbinated outgrowths; pathology and removal of adenoids; aseptic wiring of fractures; local anæsthesia in setting fractures; closing of skull wounds by the insertion of buttons of bone.

6. Operations as yet *sub judice* or on trial: Resection of pylorus; resection of cancerous intestine or omentum; removal of the spleen, of large bronchoceles, of the larynx, the pancreas, the prostate gland, the normal ovary; fixation of the kidney or of the uterus; puncture of the pericardium; opening gangrenous abscesses in the lung; tapping the ventricles of the brain.

Rash statements are to be discounted; rash operations are to be discouraged. The wisdom of our earliest Greek master in analyzing the imperfections of our art holds true to-day: "Ars longa, vita brevis est; occasio fugax, experimentia fallax; judicium difficile." Yet with Bacon came the new light of experiment. In his immortal words: "Recte veritas temporis filia dicitur, non auctoritas." Lean not on authority; the test of truth is time.

The death of Dr. S. W. Gross, of Philadelphia, was reported and Drs. D. W. Yandell, J. Ewing Mears, and P. S. Conner were appointed a committee to prepare appropriate resolutions.

The Committee on Nomination was announced as consisting of Drs. D. Hayes Agnew, William T. Briggs, Hunter McGuire, John S. Billings, and J. R. Weist.

On motion of Dr. L. McLane Tiffany, the Secretary was requested to wire to Dr. T. G. Richardson, of New Orleans, the Senior Vice-president, who was prevented by illness from attending the meeting, the regrets of the Association at his absence.

Dr David W. Cheever, of Boston, read a paper entitled

SARCOMA OF THE TONSIL—EXCISION.

The patient, a male, aged fifty-seven, single, for one year had to breathe through the mouth on account of enlargement of the left tonsil. No pain was experienced until November 1, 1888, when he "caught cold" and the tonsil swelled considerably and became sore and tender, and discharged spontaneously a few days later. At the same time he noticed some enlarged glands in the left neck. The glands gradually increased in size. The tonsil caused no more pain, but there was an increasing sense of fulness behind it, increasing dysphagia, and difficulty in articulation. There was loss of appetite and weight. When he came under observation January 14, 1889, the

left tonsil was found to project nearly to the uvula and was as large as a pullet's egg. There were two glands in the left neck, each as large as a horse-chestnut.

The operation was performed January 17, 1889, ether being given, and the patient being in the sitting posture. A gland in front and one behind the sterno-cleido-mastoid muscle were removed. The first incision was semilunar, concave upward, marking the boundaries of the digastric triangle. A second incision over the lower jaw at right angles to the middle of the first incision was then made. The mylo-hyoid muscle was now divided and the other tissues pushed to one side. The lower jaw was then sawed in two in front of the masseter muscle. The tumor was pressed out by finger in the mouth and was found to be covered with a delicate capsule. On puncture a soft material exuded. The tumor and capsule were removed without great difficulty. There was no hemorrhage, and the facial artery and external jugular veins the only vessels ligatured. The wound in the pharynx was not sutured; the jaw was wired, the external wound in the skin was partially approximated and washed with two per cent. boracic-acid solution and dressed with boracic gauze. The wound was dressed daily. Healing took place rapidly with no unfavorable symptoms. On the thirtieth day the wire was removed and the jaw found to be firmly united. Microscopical examination showed the growth to be round-cell sarcoma.

April 27th, a second operation was performed for a tumor on the same side of the neck. The throat, however, remains healthy. A large glandular mass was removed from the anterior carotid triangle. This also proved to be a round-cell sarcoma.

DISCUSSION.

Dr. D. Hayes Agnew, of Philadelphia: There are several points of interest in connection with sarcoma of the tonsil. I think that, including the case of Dr. Cheever, there are only ten or eleven on record. A second point is the fact of constant recurrence. I believe that there is only one case on record where return has not taken place. In that case the thermo-cautery was employed. Various operations have been employed—the enucleation, the écraseur, the galvano-cautery, the thermo cautery, and the external method first used by Dr. Cheever. The operation when undertaken should be done simply, with the view of palliation. The operation from without is confessedly a difficult operation, and while in the hands of experts it probably affords the best opportunity for the removal of all diseased structure, yet for the general operator some other method would no doubt be better. I have been much struck with the exposure gained by simply slitting the cheek in operations on tumors far back in the throat, as far back as the soft palate. This would probably give as good a chance of success as any other plan of procedure.

Dr. A. Vanderveer, of Albany: The first well-marked case of sarcoma of the tonsil that has come under my observation was in a man aged seventy-two. The tumor had been discovered four months before I saw him. There was a full round tumor of the tonsil, interfering seriously with deglutition and somewhat with breathing. The patient selected enucleation in preference to the operation from the outside. My intention was to remove all that I could with the tonsillitome, cutting from behind forward, then enucleate with a blunt instrument, and use the thermo-cautery. After cutting through the capsule the tonsillitome slipped behind the tonsil and it was completely enucleated. I did not apply the thermo-cautery. The patient had no return of the disease for eight months. The growth then reappeared and rapidly increased in size. Two months later the patient was taken with pneumonia, and died in a few days.

Dr. P. S. Conner, of Cincinnati: I think that the statements in reference to the infrequency of sarcoma of the tonsil are hardly correct. I know of several unreported cases, two of which came under my own observation. One was in a girl aged twenty-six. The disease was so far advanced that I thought no operation justifiable, and she died a few days later. The second case was a man aged forty. The tumor was as large as the fist. I operated by slitting the cheek, and was able to readily separate the tumor from the capsule with the finger. The operation was done in June. In July he was apparently in excellent condition. The disease began to recur in the latter part of August and grew rapidly, and in October he was found dead in bed, supposed to have committed suicide.

Dr. M. H. Richardson, of Boston: Some time ago I removed a tumor of the tonsil by external incision. The enucleation was accomplished with ease, and without opening the pharynx. A year after the operation there had been no return of the disease. This was two years ago, and as far as I know the patient is still living.

Dr. Cheever, of Boston: The operation through the cheek is probably easier and more desirable in some cases, but the operation from the outside leaves less paralysis and less scar. The great dread of these operations—opening the upper part of the alimentary canal—was formerly the danger of fistula. This has now been proven to be without foundation. I am inclined to think that the use of sutures in the pharynx or œsophagus would be more dangerous than their omission. The object of these operations is to permit the patient to die easier. It is more comfortable to die with an external tumor than with one pressing upon the larynx or throat, causing starvation or choking.

Adjourned.

AFTERNOON SESSION.

The first paper read was by Claudius H. Martin, M.D., of Mobile, and was entitled

HERNIA: A COMPARISON OF THE VARIOUS METHODS ADOPTED FOR ITS RADICAL CURE—INVITING DISCUSSION OF THEIR RESPECTIVE MERITS.

Reference was first made to the great frequency of this condition. The census reports of 1880 show that of the total number of deaths one in every six hundred was due to hernia; and out of 1,236 deaths from hernia, 141 occurred in children under one year of age. A historical review of the various operations proposed for the radical cure of hernia, from the earliest times down to the present, was then given.

The paper concluded with the following remarks: The ligature of the sac at its neck, with suture of the pillars of canal and ring, may be considered an established surgical procedure. Still, being a comparatively new operation, a discussion of its merits will be of practical value in leading to further improvements, and with them permanent success of the operation. With the present lights before us, the most important point in the operation appears to be the closing of the neck of the sac as high up as possible, so as to effectually seal up the opening into the abdominal cavity. To do this completely, it is necessary that the sac should be carefully separated from the adjacent tissues, and this is not always an easy matter, since oftentimes the true sac is obliterated and a new sac formed in the fibrous tissue, with the vascular and nervous distribution blended in such a manner as to render the dissection most difficult, if not impossible. In such a case Macewen's operation could not be performed, and it would be impossible to twist the sac as recommended by Mr. Ball. This objection does not obtain in crural and umbilical herniæ. Still, since inguinal is the most frequent of the herniæ, it is of importance in them. In the congenital cases it is much easier to separate the sac, and hence more possible to do a complete operation; but since in young children the truss, properly applied and long continued, until the abdominal parieties have become so developed as to increase the obliquity of the canal, will in

most instances produce a permanent cure, all operative procedures in children should be considered unwarrantable. In those cases, however, where an imprisoned testicle complicates the condition, the operation is unquestionably proper, and the removal of the testicle justifiable, and for the simple reason that the presence of the gland in the canal predisposes to the descent of the hernia.

Since the main point in the success of the operation appears to have been the proper disposal of the sac, it is not astonishing that operators who have given it their attention should have adopted diverse methods, each one of which has the same end in view. While Ball twists it, Macewen tucks it up; Hardee insists upon the importance of enclosing the transversalis fascia with the sac in the ligature; J. D. Bryant splits the pillars on either side and weaves in the sac; Annandale opens the canal, ties the sac, cuts it away, and stitches the opening; on the other hand, Stokes opens the sac, and then, stitching the neck, the canal, and the pillars together, he leaves the sac in position; Banks opens the sac, ligates the neck, cuts away the fundus, and sutures the pillars; Alexander, of Liverpool, opens the canal, ligatures the sac flush with the peritoneum internally, then divides the neck below the ligature, leaving the sac in the canal without suturing the ring; MacCormac advocates this plan, while Buchanan cuts down to the sac, slits it up longitudinally on each side of the cord, divides the front part horizontally, rolls up the upper part with which he plugs the internal ring, and turns down the lower half to form the tunica vaginalis.

From a comparison of all the methods, it is apparent that no fixed rule of procedure is established, and although the radical operation is a marked improvement in the treatment of hernia, whether free or strangulated, we cannot consider it perfected, because the methods hitherto resorted to have not proved radical in results. The operation is ideally correct, but the question arises whether, with the uncertainty of success, the risk justifies the operation, especially so if the circumstances of the individual are such that he can content himself with the use of a properly adjusted truss.

DISCUSSION.

Dr. M. H. Richardson, of Boston: My experience with the operation for the radical cure of hernia has been small. Sufficient time has not elapsed to permit us to say what the ultimate result will be. My preference has been for the invagination of the sac as proposed by Macewen. I do not advocate the operation in trivial cases of hernia. Here I believe that the application of a well-fitting truss is the more conservative and better plan.

Dr. D. Hayes Agnew, of Philadelphia: We yet have to speak with a good deal of reserve as to which is the most successful operation. Sufficient time has not elapsed to enable us to speak positively upon this subject; the operation which seems to me most applicable is that in which the sac is ligated, pushed into the internal ring, stitched there, and transverse sutures passed across the canal. I think that the omentum will constitute an important element in the radical cure of hernia. I believe that in all cases of strangulated hernia we are justified in attempting the radical cure. The same is true in those cases of hernia which cannot be controlled by a truss, leaving the patient exposed to great risk.

Dr. W. W. Dawson, of Cincinnati: In cases where life is not in jeopardy we should approach the operation with a great deal of consideration. I have seen very different results from the same operation performed with equal care in cases apparently similar. Where life is in danger duty impels us to operate; but where the question is one of æsthetics or abridged usefulness, the operation should be approached cautiously.

Dr. L. McLane Tiffany, of Baltimore: My operations for radical cure in cases of strangulated hernia are more successful than formerly, and I attribute this to the fact that I operate now in a more cleanly manner. I think that no operation for strangulated hernia is complete unless an attempt at radical cure is made. Where the hernia is not strangulated, the question arises as to the kind of hernia, the inconvenience that it causes, and the circumstances of the individual. I do not believe that the operation *per se* is likely to be followed by much trouble. The method to be employed must be determined by the peculiarities of the case. In regard to children, I think in congenital hernia, especially where it is probable that the child will have to work for its living, that it is the duty of the surgeon to operate. Here it is not necessary to open the peritoneum. A ligature is thrown around the sac above and another lower down, and the intervening portion excised, forming a tunica vaginalis below and a peritoneal sac above.

Dr. D. W. Yandell, of Louisville: I believe that in strangulated hernia the surgeon should attempt the radical cure. This has been my practice and I have used various methods. It is difficult for any one man to decide which is the best operation, but in the course of ten years we shall be able to arrive at some opinion. At present, it is simply historical and no one can say which is the best method.

Dr. J. Ford Thompson, of Washington: So far as my experience has gone, I think that there is very little difference in the operations; the main point is to get rid of the sac. I think that suture of the pillars is useless; the operation that I have employed is practically that of McBurney. In strangulated hernia it seems to me that there must be danger in inverting the sac as in Macewen's operation. I have seen many cases of hernia in children, but I have never been able to adopt the view of Dr. Tiffany. As a rule, if we can keep the intestine reduced, the hernia is cured in a comparatively short time. In some cases of large hernia in children, the radical operation is probably justifiable.

Dr. W. W. Keen, of Philadelphia: We doubtless all agree that in strangulated hernia, no operation is complete without an attempt at radical cure. We also agree that in those cases where the hernia is not controlled by a truss, and the patient is unable to labor, radical operation is advisable. The tendency at the present time is to extend the limits of the operation beyond these two classes. The presence of hernia is always attended with risk; hence the tendency at present is to operate on a large number of cases. In children, if the retentive measures after a thorough trial for a few years fail to effect a cure, I should be inclined to operate.

In very large hernia, I should not be inclined to use Macewen's method. The life of the sac is imperilled by separating it. In large hernia a certain amount of preparatory treatment is desirable to accustom the abdominal cavity to the presence of the intestine, and thus prevent undue pressure upon the diaphragm and strain upon the sutures. In the more ordinary cases, I think that the operation of McBurney is the best. I should place the operations in the following order: McBurney's, Macewen's, and Ball's.

Dr. C. H. Mastin, of Mobile: I have little to add. The object of my paper was to elicit discussion as to the best method of operating. I have performed thirty four operations for hernia, with three deaths. Two of these may be excluded, as the patients were *in extremis* at the time of the operation. This leaves thirty-two cases with one death. Of this number, there have been eight radical cures. One of these cases I have watched for seventeen years. The method employed was after the sac was opened to pass a deep pin through the pillars, with an ordinary twisted suture over it, close the incision, and place the leg on a double inclined plane. Thirty-one cases have recovered with primary union. I believe that the cure is produced by the dense cicatricial tissue formed in the canal.

Dr. J. R. Weist, of Richmond, Ind.: I have operated on strangulated hernia forty-one times. In thirty cases I have attempted to make a radical cure, using a variety of

methods. In only four cases have I succeeded in keeping the hernia in. A number have remained well for six months to two years, and then the hernia has reappeared as bad as ever.

Dr. M. H. Richardson, of Boston, read a paper entitled

THE SURGICAL TREATMENT OF GANGRENOUS HERNIA.

The principal question discussed was the relative advantage of immediate excision and suture of the bowel, and the formation of an artificial anus with subsequent closure. The views of various authorities were first quoted. The author then briefly reported the cases coming under his own observation.

Case I.—A young woman with right femoral hernia, strangulated for one week. Bowel was found gangrenous and excised. Death from shock the next day.

Case II.—Woman, sixty-five years of age, left inguinal hernia. On opening the sac the bowel was found strangulated and dark in color. The hernia was reduced, but the symptoms of obstruction continued and five days later the sac was opened and the intestines found strangulated by a band within the ring. The bowel was drawn out, the strangulated portion excised, and the ends sutured. The patient died of shock.

Case III.—Woman, forty-two years of age, had been treated by Christian Scientists for five days. There was a large umbilical hernia, with gangrenous intestine. The sac was filled with fecal matter. The constriction was found and the bowel drawn out and excised beyond the constriction and the ends united. This patient recovered perfectly and has remained well.

Case IV.—A woman with enormous umbilical hernia, with strangulation and gangrene. The fecal abscess opened by natural processes and the woman has been in perfect health since, with the exception of the artificial anus. This will be operated on next week.

In the two cases of excision the time required for the passage of the sutures was twenty minutes; the whole operation did not exceed one hour. The longer the operation the more are the chances reduced.

Reference was then made to the use of the bone plates of Senn and the catgut rings of Abbe. These devices may do more in such cases than anything else. Every case must be decided on its merits. The danger to life of resection in suitable cases is probably not greater than the danger of artificial anus with the dangers attending the subsequent closure of the same. The danger of the latter operation is especially great when the opening is near the stomach. Artificial anus is also objectionable on account of the excoriation of skin which attends it, and also the risk of giving way of the sutures.

The author concluded as follows: It seems to be the general opinion of surgeons everywhere that, under some circumstances, excision and suture are justifiable. It seems to me that the primary operation should only be done where all the conditions are favorable. It is pre-eminently a hospital operation. Every appliance and preparation should be ready for its most perfect performance. It is not an operation to be recommended to the general practitioner or to the unqualified operator. It depends for success more often upon rapid and skilful execution than almost any other operation.

There is no doubt that in some cases this procedure is imperative, where the part necrosed is too high up for intestinal nutrition to be maintained. The difficulty, of course, is to recognize this state of things. Even when it can be demonstrated that the jejunum is gangrenous, excision is not justifiable unless the patient's condition offers some hope, and there is a chance that the relief of the symptoms of obstruction may be followed by sufficient improvement to make a secondary operation possible.

DISCUSSION.

Dr. D. Hayes Agnew, of Philadelphia: My experience is too limited to enable me to say much upon this subject. I recall three cases of gangrenous hernia. One was a case of inguinal hernia in which I excised a portion of the bowel. The patient recovered from the immediate effects of the operation and passed out of my hands. Some months afterward he was advised by another surgeon to apply a compress to the external opening so as to compel nature to establish a communication between the two portions of bowel. He did so, with fatal results. The second case was one of femoral hernia which had lasted six or seven days. It was laid open and the patient recovered. As the granulations filled the opening, communication took place between the two portions of bowel. The third case was one of umbilical hernia. I opened the sac, excised ten inches of intestine, and carefully stitched the ends. The patient died of hemorrhage at the end of two days. It occurs to me that it would be wiser in such a case to stitch the intestines to the skin and at a subsequent period do this operation of Dr. Abbe.

Dr. William T. Briggs, of Nashville: Although I have seen many cases of strangulated hernia, I have seen but three instances of gangrenous intestine. In the first case I opened the abscess and the fecal contents escaped. The patient lived some time, but died of inanition. In the second case I attached the bowel to surrounding parts and made an opening into it. The patient died in twenty-four hours. The third case I left entirely to nature, and the patient recovered with an artificial anus.

Dr. P. S. Conner, of Cincinnati: I have had three cases of gangrenous hernia, and have seen a fourth in the practice of Dr. Dandridge. The operation of intestinal anastomosis is valuable. It can be performed rapidly, it is simple, and establishes the continuity of the intestinal tract more perfectly than any other operation that has been suggested.

Dr. W. F. Peck, of Davenport: From my experience, I think that great benefit in the way of prevention would result from educating the subjects of this trouble in regard to the dangers of hernia and the way of reduction.

Dr. J. Ewing Mears, of Philadelphia: I have had two cases, one of umbilical hernia in which I made an artificial anus; the other of femoral hernia, where I performed resection and returned the intestine to the abdomen. Both resulted fatally inside of forty-eight hours. A surgeon of Vienna has suggested that in these cases the gangrenous intestine be withdrawn from the abdomen and held in place outside by a tampon of iodoform gauze. In this way the intestine can be kept under observation and treated as seems best.

Dr. W. W. Keen, of Philadelphia: I think that the introduction of the method of intestinal anastomosis by the bone plates of Senn or the catgut rings of Abbe is a great advance over former methods. The mortality following this method is greatly less than that following reunion of the ends of the bowel.

Dr. T. A. McGraw, of Detroit: I have heard nothing in regard to the pathological condition of the bowel above the seat of stricture. In some cases the bowel is healthy immediately above the point of strangulation, while in others the inflammatory process extends six to ten inches above the point of constriction. This must make a great difference as regards the results of operation.

Dr. A. Vanderveer, of Albany: Eleven years ago I saw a case of gangrenous inguinal hernia, but the condition was so bad that nothing was done. The patient died a few hours later. Two years ago I saw a similar case, except that the patient was younger and the collapse not so great. I opened freely and left it to nature. The man recovered with an artificial anus.

Dr. H. H. Mudd, of St. Louis: I think that gangrenous hernia is not so rare as seems to be the general impression, I can recall at least seven cases. Three of these cases occurred more than four years ago and all died. During the last four years I have operated on four cases, excising a portion of bowel, with recovery in one case.

Adjourned.

SECOND DAY, WEDNESDAY, MAY 15TH — MORNING SESSION.

DR. J. COLLINS WARREN, of Boston, read a paper entitled

THE EARLY DIAGNOSIS OF MORBID GROWTHS.

Reference was first made to the great desirability of some means of making an early diagnosis in cases of possible malignant disease. The attempt to make a microscopical examination of morbid growths before their removal dates back to the earliest period of microscopical histology. The pain and danger of inflammation attending the methods adopted led to their abandonment. Antiseptic surgery, however, now enables us to perform such an operation almost with absolute certainty of absence of inflammation. Local anæsthesia with ether spray or cocaine renders the exploration free from pain. The instrument which the author employs consists of a small cannula, sharpened at the end. The calibre of the instrument varies from two to five millimetres. The instrument is used by gently rotating the cannula between the fingers. After the instrument has penetrated the tumor to the desired depth, it is withdrawn a short distance, and then entered obliquely, so as to cut off the column of tissue. The piece removed may be as large as five millimetres in diameter and three centimetres in length, or even longer. The fragment can be at once examined by means of freezing microtome or placed in alcohol and hardened. The operation can readily be performed at the physician's office and immediate diagnosis made. Several cases were reported, illustrating the information obtained by the use of the cannula. The instrument has been used in over one hundred cases, with little or no discomfort to the patient and with satisfactory results. It has been used in abdominal tumors. It has been used in one or two growths involving the abdominal parietes and peritoneum, but not in deep-seated organs. The object of the author in bringing the results of his observations before the Association was to show that modern improvements have made an old and discarded method not only practicable but a valuable addition to our means of surgical diagnosis.

DISCUSSION.

DR. F. S. DENNIS, of New York: I wish to protest against reliance upon this instrument in the diagnosis of malignant disease. I have never found pathologists willing to base a diagnosis of malignant disease upon the shreds of tissue removed by such instruments. More reliance is to be placed upon the clinical features than upon the microscopical appearances. Among these are age, situation of the tumor, the macroscopic appearance, pain, cachexia, lymphatic enlargement, hereditary influence, and, finally, the use of the harpoon. While the harpoon or cannula is a useful adjuvant, we cannot rely upon it absolutely in making the diagnosis.

DR. P. S. CONNER, of Cincinnati: I think there is nothing more definitely established than the difficulty of relying absolutely upon the microscopical examination in cases of supposed malignant disease. It is a confirmatory testimony of great value. In the instrument presented we have an additional aid to our means of diagnosis. While the points presented by Dr. Dennis are valuable, they do not aid much in the early diagnosis.

DR. R. A. KINLOCH, of Charleston, N. C.: It is a well-established surgical principle that all tumors should be removed, so that the early diagnosis is perhaps not so essential. The question arises as to whether it would not be better to remove the tumor and make the diagnosis of its nature afterward.

DR. W. H. CARMALT, of New Haven: In carcinoma and sarcoma the clinical features are to my mind a great deal more important than anything we can obtain from the microscope. Microscopical examination of different parts of the same tumor may present different appearances. Another point in regard to the use of the cannula is the danger that the irritation excited by the instrument may convert a benign tumor into a malignant growth.

DR. M. H. RICHARDSON, of Boston: I have seen this instrument used in many cases without bad effect, and the microscopists consider that they derive valuable information from examination of the plugs of tissue removed. We cannot make a correct diagnosis in the earliest stage of malignant disease from the clinical evidence alone, and it seems to me that in the early diagnosis this instrument affords valuable aid.

DR. L. MCLANE TIFFANY, of Baltimore, then read a paper entitled

FREE DIVISION OF THE CAPSULE OF THE KIDNEYS FOR THE RELIEF OF NEPHRALGIA.

Four years ago the author had suggested the use of incision of the capsule of the kidney in the treatment of nephralgia. The patient, a woman, aged forty-nine, white, married. Had had gonorrhœa and syphilis. She had had abscess of the pelvis opening by the vagina, the discharge continuing for two years. Three years ago she experienced in the right loin sudden severe pain lasting for a moment. It was supposed to be due to passage of a kidney stone. The attacks recurred at irregular intervals, the periods becoming progressively shorter and the pain more intense. No calculi had ever been voided. Blood had been seen at rare intervals. The pain always began in the right loin midway between the pelvis and the ribs. It then extended toward the middle line of the body and down to the bladder and groin on the right side. Exertion was apt to induce it. Pressure over the right kidney caused acute pain, but no tumor could be made out. The urine was moderately acid, sp. gr. 1.022, contained pus-cells and a few red-blood disks. There was no rise of temperature during the attacks.

The operation was performed, January 12, 1889. The kidney when exposed moved freely during respiration. A deep stellate scar existed in the kidney, two inches from the lower end. No other abnormality was discovered. A sound was passed into the pelvis and a systematic exploration made, but no stone was detected. The capsule was then freely slit open for three inches. The edges of the cut gaped widely. The wound was then closed and an aseptic dressing applied. No urine passed by the lumbar wound. This soon healed and since the operation, a period of four months, there have been no attacks of nephralgia.

DISCUSSION.

DR. THEODORE A. MCGRAW, of Detroit: Three months ago, I operated on a woman on the supposition that there was a renal calculus. None was found, but the capsule was freely slit and since the operation there has been no return of pain.

DR. LANGE, of New York: In one case of severe pain recurring at irregular intervals, I operated with the expectation of finding a stone in the kidney, but none could be detected. I then proceeded in the manner described by the reader. The patient remained free from pain for three or four months. The attacks then reappeared.

DR. W. W. KEEN, of Philadelphia: I would like to refer to one source of error in the diagnosis of renal calculi which has not been mentioned. I recently operated on a case of tumor of kidney in which when the needle was passed into the substance of the organ it gave a distinct impression of coming in contact with a stone. The tumor was malignant and so adherent that it could not be removed. Subsequent examination showed that there was no calculus and that the needle must have come in contact with a calcareous vessel, of which there were several, or a mass of calcareous matter which was present.

DR. JOHN HOMANS, of Boston: I recently operated in a case in which there was a large swelling in the perineum in a boy aged fifteen. I removed by perineal section thirteen stones from the urethra. The urethra would admit my forefinger. There was also a swelling in the loin

which did not disappear after the operation. Three weeks latter I opened the kidney through the right loin. I found a considerable quantity of pus but could detect no stone, although I am not sure that a stone may not be present.

The next paper, read by DR. J. M. BARTON, of Philadelphia, was entitled

DIGITAL DIVULSION OF THE PYLORUS FOR CICATRICIAL STENOSIS.

Digital divulsion of the pylorus for cicatricial stenosis, as first practised by Professor Loreta, of Bologna, Italy, in 1882, has scarcely received the attention which I think it deserves anywhere except in Italy. The mortality from the twenty-five operations which I have succeeded in collecting is not great when we consider that every successful case is a patient rescued from certain and by no means distant death, and this mortality is already decreasing.

The cases in which the operation would be of service are not so very rare. When searching the journals for records of such operations I found the reports of the presentation of many specimens of cicatricial stenosis of the pylorus to various pathological societies. My own experience has been limited to two operations. Even the first, though it proved fatal on the fourth day, encouraged me to operate again, as I was fully satisfied that had it been performed earlier, when the patient was stronger, there was no reason why it should not have been successful.

My second case has the following history: Mrs. G——, aged forty-eight, a patient of Dr. Adams, of Vineland, N. J., was first seen by me at her home near Vineland, in December, 1888. For convenience of study and operation I admitted her to Jefferson College Hospital in January, 1889. During 1884, 1885, and 1886 she had suffered from gastric ulcer; she had pain and vomiting immediately after eating, the vomiting occurring as often as six times in the twenty-four hours; she lost greatly in weight and had two severe hemorrhages. In 1887 all of the symptoms left her, and for the greater part of the year she enjoyed excellent health, weighing in January, 1888, one hundred and forty-three pouuds, which was more than she had ever weighed in all her life. During 1888 she became very ill with symptoms of pyloric obstruction and lost flesh rapidly, weighing after her admission to the hospital (January, 1889) only ninety-three and one-half pounds. She then vomited but once in twenty-four or forty-eight hours. This occurred when she laid down at night and was not accompanied by nausea. It was usually from one and a half to two quarts in quantity and measured nearly and sometimes quite as much as all the nourishment taken since the preceding act of vomiting twenty-four hours before. Many articles taken during the day could be recognized; indeed, she stated that she had occasionally been able to recognize articles eaten as long as two weeks before. As she took her meals she felt that the stomach was becoming more and more distended and when she laid down at night, gravity brought the contents of her stomach into her throat and they were then vomited. Her bowels were obstinately constipated, acting only once in twelve or fourteen days, and then only after frequently repeated large injections, purgatives administered by the mouth producing no effect. She had lately been able to occasionally feel a small tumor about the size of a hazel nut, two inches to the right of the umbilicus, and situated quite deeply. Her stomach was greatly enlarged; distended by the carbonic acid gas developed from half of a soda powder it reached as low as the umbilicus, and as far as the small tumor, though we could not say that the tumor was connected with the stomach.

The vomited matters separated themselves into the usual three layers, the middle one being quite clear; they were nearly free from undigested food and not offensive; free hydrochloric acid, though searched for, was not found.

The operation was performed in the presence of the class of Jefferson Medical College, February 16, 1889. The surface of the abdomen had been prepared the day before, the mercurial dressing being still on when the patient was brought into the amphitheatre. Her stomach had been washed out on the morning of operation with a solution of biborate of soda. This had been repeated until the fluid returned quite clear. Chloroform was used as the anæsthetic in preference to ether, as being less apt to be followed by vomiting. The hands and instruments having been prepared with antiseptic solutions, I made a median incision through the skin, about four inches long, terminating at the umbilicus. The peritoneal incision, however, was only three inches in length. There was but little bleeding, and it was readily controlled by clamp forceps.

The dilated stomach was found directly beneath the incision. The juncture of the stomach and duodenum, even from the outside, was markedly contrasted and irregular on its surface. There were no adhesions and there was no tumor. The tumor was found to be a hard scybalous mass in the ascending colon which also contained quite a number of smaller masses of hardened fæces. As the wall of the stomach three inches from the pylorus felt quite healthy, I folded it transversely, midway between the greater and lesser curvatures, and with a pair of sharp scissors made an incision between one and a half and two inches in length. There was no bleeding requiring attention. I introduced my index finger through this incision, and felt the pylorus contracted to about the size of a No. 10 French catheter; its margins were quite hard and fibrous. As the fingers would not enter, the blades of a small uterine dilator were guided by the finger into the contracted pylorus, which was then readily dilated until it admitted the index finger. With the aid of a pair of œsophageal forceps it was still further dilated until both the index and middle fingers were admitted. The two fingers were then separated about half an inch, when I ceased, feeling that further effort would probably rupture the mucous membrane. This dilatation gave to the pylorus a circumference of four and one-half inches.

The mucous membrane of the stomach at the point of incision was brought together by a continuous silk suture, and the serous coat by a continuous Lembert suture, also of fine silk, carried in an ordinary sewing needle. This suture was introduced deeply into the muscular coat in order to obtain a firm hold, even then it tore out at one or two points, requiring an interrupted suture to be used at those places. When the finger was first introduced into the stomach it caused some retching, forcing most of the stomach out of the wound, where it was kept during the subsequent manipulations. After the wound in the stomach was closed, the organ was carefully sponged and restored to the abdominal cavity. The abdominal wound was then closed and dressed in the usual manner.

The patient vomited about four ounces of blood half an hour after the operation, but there has been no nausea and no vomiting since. She was nourished exclusively by the rectum until the fourth day. From that time until the fourteenth day she was fed upon peptonized milk and animal broths. After the seventh day she took from forty-eight to sixty ounces of liquid nourishment in the twenty-four hours. Some solid food was given on the tenth day, and after the fourteenth day she was fed upon a carefully selected solid diet. On the thirtieth day after the operation she was able to eat eggs, mutton chops, oysters, beef, chicken, lamb, potatoes, cream toast, bread and butter, milk, and coffee. Her temperature has never been over 99° F., nor under 98° F. since the operation. Her bowels act naturally every day. The abdominal stitches were removed on the ninth day. On February 8th, before the operation, she weighed ninety-three and a half pounds; March 25th she weighed one hundred and ten pounds; April 15th, one hundred and eighteen pounds, and April 27th, one hundred and twenty-two pounds. She was able to leave the hospital April 10th. She had no pain at any time and required no anodynes.

Operations of Digital Divulsion of the Pylorus for Cicatricial Stenosis.

No.	Operator.	Residence.	Date.	Age.	Sex.	Duration of disease.	Tumor.	Abdominal mass.	Result.	
1..	Loreta	Bologna	Sept. 14, 1882.....	47	M.	20 years ..	Tumor..	Edge ribs.	Cure; five months after in perfect health.	Trans. Acad. Bologna, series iv., vol. 4.
2..	Loreta	Bologna.	Dec. 22. 1882	18	M.	7 years ...	None ..	Edge ribs.	Cure	Raccog. med., 1883, p. 147.
3..	Giommi	Cezena	Feb. 1, 1883	?	F.	(?)	(?)	(?)	Death in twelve hours..	Raccog. med., 1883, p. 147.
4..	Loreta	Bologna	March 17, 1883....	46	M.	17 years ..	(?)	Edge ribs.	Death in thirty-seven hours.	Raccog. litore. March 30, 1883.
5..	Loreta	Bologna	July 15, 1883	34	F.	(?)	(?)	(?).....	Cure	Lancet, Sept. 1, 1883, p. 376.
6..	Fratlini	Venice	June 9, 1884	?	?	(?)	(?)	(?).....	Cure?	Gaz. d' Osp., 1884, p. 392.
7..	Loreta	Bologna	March 9, 1885. ...	26	F.	(?)	Tumor..	Median...	Cure	Bull. delle Sci. med., 1888, p. 137.
8..	Loreta *	Bologna	.....	.....	.....	.....	.....	.....	Death; shock.	
9..	Loreta *	Bologna	.....	.....	.....	.....	.....	.....	Cure	Med. News, Phila., March 20, 1886.
10..	Loreta *	Bologna	.....	.....	.....	.....	.....	.....	Death; shock.	
11..	Loreta *	Bologna	.....	.....	.....	.....	.....	.....	Death; hemorrhage.	
12..	McBurney ...	New York	July 6, 1885	39	F.	20 years ..	Tumor..	Edge ribs.	Death; hemorrhage ..	Annals of Surg., 1886, p. 372.
13..	McBurney ...	New York	July 6, 1885	52	F.	30 years ..	Tumor..	Edge ribs.	Death, thirty hours; suppression urine.	Annals of Surg., 1886, p. 372.
14..	Loreta	Bologna	1886.....	19	F.	(?)	(?)	Median...	Cure	La Riforma med., 1886, p. 259.
15..	Haggard	England	March 9, 1886.....	51	F.	5 years ...	None...	Edge ribs.	Cure; well March 30, 1888.	Brit. Med. Jour., Feb. 19, 1887.
16..	Loreta	Bologna	March 16, 1886....	33	M.	(?)	None...	(?)..	Death, tenth day; hemorrhage.	Accad. Sci. Bologna, April 24, 1887.
17..	Barton	Philadelphia ..	May 22, 1887	58	M.	1 year	Tumor..	Median...	Death, fourth day; exhaustion.	Jour. Am. Med. Assn., 1888, p. 548.
18..	Loreta	Bologna	Sept. 14, 1887.....	47	F.	7 years ...	(?)	Median...	Death, fifth day; tetanus.	Gaz. d' Osp. Milano, 1887, p. 803.
19..	Loreta	Bologna	Oct. 13, 1887	35	F.	5 years ...	(?)	(?).....	Cure	Gaz. d' Osp. Milano, 1887, p. 803.
20..	Loreta	Bologna	Oct. 31, 1887	34	M.	10 years ..	(?)	(?).....	Cure	Gaz. d' Osp. Milano, 1887, p. 803
21..	Treves	London	Dec., 1887	?	M.	(?)	(?)	(?).....	Cure	Lancet, Feb. 18, 1888, p. 336.
22..	Loreta	Bologna	Jan. 30, 1888.....	54	M.	15 years ..	Tumor..	Median...	Cure; recontracted ...	Gaz. d' Osp., 1888, p. 618.
23..	Loreta	Bologna	June 20, 1888	54	M.	15 years ..	.....	Median...	Cure; reoperation; same patient.	Gaz. d' Osp., 1888, p. 618.
24..	Bull	New York	June 11, 1888	38	M.	20 months.	None...	Edge ribs.	Cure	Letter from Dr. Bull.
25..	Barton	Philadelphia ..	Feb. 16, 1889.....	48	F.	5 years ...	Tumor..	Median...	Cure.	

* In a letter to Dr. Harris, Loreta stated that to November 30, 1888, he had had 9 cases, of which 3 were cured and 4 died, 3 from shock and 1 from hemorrhage.

I have succeeded in collecting twenty-five published operations, many or these are by Professor Loreta. I had hoped to have obtained the result in all his cases, but Dr. Peruzzi, his chief assistant, replies to a letter of inquiry that the Professor has performed in all about thirty operations, and that at least six more have been performed by other Italian surgeons. They were all successful when the diagnosis was correct. This would make the total number of operations about 43. The 25 operations included in my list were performed on 24 patients, one patient having been operated on twice successfully by Professor Loreta. From the 25 operations there were 15 recoveries and 10 deaths, making a mortality rate of forty per cent. Of the 10 deaths, 6 were due to shock, 2 to hemorrhage, 1 to tetanus, and 1 to suppression of urine.

The large mortality from shock in an abdominal section performed in from half an hour to an hour is probably due to the fact that in this, as in most new surgical procedures, the operation is postponed too long. The mortality is already decreasing. Of the first 12 cases reported 6 recovered and 6 died, while of the last 12, 9 recovered and 3 died. This mortality can perhaps be still further lessened by earlier diagnosis and operation, and by such methods of operation as are most quickly performed and accompanied by the minimum loss of blood.

DIAGNOSIS.

The diagnosis can be conveniently divided into two parts: 1, To determine the existence of pyloric obstruction; and 2, to differentiate between obstruction caused by cancer and that caused by cicatricial stenosis. But few of the reported cases have such a typical history as the one I have related. The co-existence of dyspeptic symptoms, or of some still open ulcers, complicated the diagnosis in most of the cases. I should regard as of little value some of the symptoms upon which much stress has been laid. The material vomited in some cases consisted of partly digested food, in some it was wholly undigested and offensive, while in others it consisted of well-elaborated chyme. The character of the material indicates the health and physiological activity of the stomach, but throws little light upon the condition of the pylorus. In some cases sarcinæ were present, but in many they were absent. The same may be said of starch granules, of needles of the fatty acids, of free hydrochloric acid, of pain, and of other dyspeptic symptoms which have usually existed for many years before the symptoms of obstruction occurred.

The following symptoms I would consider of value: 1, A greatly dilated stomach; 2, the vomiting of from one to two quarts of material at one time; 3, the recognition in the vomited matter of articles that have been taken many hours, days, or weeks before; 4, when the act of vomiting is peformed with great ease, without nausea, and the appetite is good immediately afterward; 5, obstinate constipation; 6, the non-effect of ordinary purgatives; 7, a preceding history of gastric ulcer of several years' duration and temporary improvement followed by simple obstructive vomiting of well-elaborated chyme many hours after taking food. This typical history occurred but twice among the twenty-four cases. Where the symptoms are obscure great reliance may be placed upon the detection of a decidedly enlarged stomach, as this is rare except as a result of mechanical obstruction of the pylorus.

The mere presence of tumor is almost without value in the differential diagnosis between cancer and stenosis. In the 24 cases tumor was present in 7, absent in 4, not noted in 13. A rapidly growing nodulated tumor low down in the abdomen is probably malignant. A poorly defined tumor, not increasing in size, high in the abdominal cavity, is probably non-malignant. The average duration of cancer of the pylorus is one year (Brinton), the maximum duration three years (Bartholow). The average duration of the gastric symptoms in 13 of the 24 cases in which this is noted was eleven years. The history of temporary improvement is against malignant disease. In the later stages of cancer the obstruction is often removed by ulceration, and diarrhœa occurs. In the later stages of ulcer the obstruction increases and the stenosis is more obstinate.

THE ABDOMINAL INCISION.

In all of the reported cases but two methods of opening the abdomen have been used. One by an incision running from one inch below the ensiform cartilage to the extremity of the ninth rib on the right side, a distance of about six inches; the other by an incision in the median line between the ensiform cartilage and umbilicus and from three to six inches in length. The first method was used by Loreta in his earlier cases but he now uses the latter exclusively.

The stomach wound should be made far enough from the pylorus to be in healthy tissue. If some inches from the pylorus, it will be outside the zone of inflammation

following the dilatation. Experimenting upon cadavers, I found that separation of my fingers more than an inch caused rupture of the mucous membrane.

The stomach-wound has been closed in many ways and all did well. In no case was there the slightest leakage. No case suffered from peritonitis and in none was the stomach-wound the cause of death. I would suggest that probably the best method would be a continuous suture of catgut to the mucous membrane and the suture of Appolito to the peritoneum.

DIET.

In some of the reported cases food has been given as early as a few hours after the operation without injury. I delayed until the fourth day, although I see no reason why food should not be given earlier. Peptonized milk, animal broths, diluted wines, and the yolks of eggs would be the best articles, according to the condition of the stomach prior to operation. Rectal alimentation will be required until sufficient food can be given by the mouth. Solid food has rarely been given before the tenth day and then sparingly.

PERMANENCY OF CURE.

Recontraction of the cicatricial tissue would naturally be feared, but Loreta, in January, 1885, nearly three years after his first operation, writes: "I have now operated on six cases; they all have recovered and all remain well up to the present time." Haggard in 1888 reports that the case he operated on two years before was "still perfectly well, no vomiting, dilatation of stomach less, and she has recently married." Peruzzi in his letter to me, March 22, 1889, states that he knows of only one relapse among the thirty cases upon which Professor Loreta has operated. This patient was reoperated upon, recovered, and remained well.

In four of the fatal cases included in the list the obstruction was valvular, due to irregular contraction of the walls of the stomach. In another case, not included in the list, as the stomach was not opened, the valvular obstruction was caused by distortion produced by external adhesions. These were divided and the patient made a good recovery. In another case, not included in the list, the operator, recognizing that he had badly ruptured the mucous membrane while stretching the pylorus, immediately performed pylorectomy, with recovery of the patient. In another case the obstruction was caused by an adherent pancreas. The cause of the adhesion was an ulcer starting in the posterior wall of the stomach and penetrating the pancreas. In this case incision about two inches in length was made from stomach to duodenum, passing through the pylorus. The two extremities of the wound were brought in contact and the wound sewn up at right angles to its position when made. When completed, it was parallel to the long axis of the body. This patient recovered after a serious illness.

DISCUSSION.

Dr. R. A. Kinloch, of Charleston, S. C.: I have no personal experience with this operation. We must accept the testimony of reliable men, but I cannot understand how an organic stenosis of the pylorus is cured by a single dilatation. This is not the case with organic stenosis in other parts, as the rectum and the œsophagus. I am inclined to believe that where the benefit has continued for any length of time the organic change has been slight. I can understand how benefit would be expected if the wound were kept open and the stricture systematically dilated.

Dr. M. H. Richardson, of Boston: The mortality of gastrotomy as a primary operation is extremely small. I have also found from sixty dissections that the longitudinal incision between the greater and lesser curvatures made the best incision for reaching either the pylorus or the cardiac extremity of the stomach. The shortest incision was one inch but the incision usually required was two or three inches.

Dr. J. Ewing Mears, of Philadelphia: While it may not be easy to explain the results obtained by digital divulsion of the pylorus, there can be no question as to the beneficial results. The evidence of reliable operators certainly indicates that it is a proper operation and attended with successful results. This operation should always be performed in preference to pylorectomy.

Adjourned.

(To be continued.)

Correspondence.

INHALATIONS OF CHLOROFORM IN PHTHISIS.

To the Editor of The Medical Record.

Sir: In your issue of April 27th, page 465, "News of the Week," I notice the following: "Inhalations of Chloroform (Clemens) is among the latest specifics for the cure of phthisis pulmonalis."

Scientifically considered, as well as from a practical application, chloroform inhalations should prove *the* remedy for the *staying*, if not for the cure of pulmonary phthisis. Attending a former faithful servant, Paul P——, for laryngeal phthisis, following chronic pulmonary phthisis, last fall, I was driven to the wall with my remedies by the severity of the case—the pain, particularly, becoming so severe that deglutition became almost impossible. I had read the notice, in several journals, of the antiseptic powers of *chloroform water* in the earlier part of 1888, and I presume this created a chain of thought the final link of which was suddenly furnished on November 3, 1888, on my way home from a visit to Paul P——, by the spontaneous conclusion that inhalations of chloroform as a remedy for phthisis pulmonum, was the ideal therapeutic means of combating the disease, if the reasoning that this disease owes its origin and progress to the presence and work of Koch's bacillus is correct.

On my return to my home I at once informed my wife, who administers chloroform for me at all times, from the operation of ovariotomy to the lancing of a felon, and also my secretary, Mrs. Kathrine DuBois, of my conclusions. That same afternoon I gave chloroform inhalations for the first time as a remedy for phthisis, and, to my surprise, my patient did not only enjoy the euthanasia, which even one-half grain doses of morphine and five per cent. solutions of cocaine had denied him, but he also slowly but surely revived to such an extent that he was enabled to partake of food abundantly, in consequence of which he soon left the bed; however, to succumb eventually to the disease, a very rapid acute miliary tuberculosis.

Cases of phthisis pulmonum are not very frequent in Nebraska, and only one case out of four treated hitherto presented itself which gave reasonable assurance that any kind of remedy might prove beneficial. A typical case, D. H——, from Massachusetts, came to me, January 7, 1889, and was treated until February 16th by inhalations of chloroform, the vapors of which were saturated with turpentine and balsam of Peru, all of this being forced into the lungs by compressed oxygen gas. His wife writes me, under date of March 31, 1889: "Mr. H—— has been out every day since our return either walking or riding, some days both; last Thursday worked three hours at carpentry; seemed tired but not exhausted. Yesterday helped me in papering a room an hour or more, besides walking down town twice, a distance as long as from your house to the post-office (about a quarter of a mile), and now contemplates painting a room."

At this writing the patient is steadily improving, and if it is noted that he could scarcely be out of bed when he came to me, the conclusion is justifiable that he has been reclaimed by the means employed.

I will not enter into details further than to say that

since the third day of November last I have diligently searched for information regarding the inhalation of chloroform as a remedial agent, and found it only alluded to *once*—in Dr. Wesener's paper in the fourth volume of the *Journal of Bacteriology*, entitled "The Antiparasitic Treatment of Pulmonary Consumption," page 797. I read (translated): "Also inhalations of which he (S. Solis-Cohen) deems useful, are creasote, æthyljodid, terebin, turpentine oil, tincture of benzol, thymol, and chloroform."

The learned author of the paper alluded to, by my request, sent the same to me. It is a reprint from the "Transactions of the Medical Society of the State of Pennsylvania," vol. xix. On page 11 he says: "Chloroform finds indications as a sedative to troublesome cough, and as a mitigant of the sharpness of some specimens of terebene." You will find in this quotation not the slightest hint of the use of chloroform as a remedial agent for the cure of consumption.

The first and only allusion to this use of chloroform comes to me in the quotation from THE MEDICAL RECORD, heading these lines. You will fully appreciate my desire to be put into the possession of Dr. Clemens' paper; aiding me in this, you will put me under great obligations.

Very sincerely yours,

A. G. MANSFELDE, M.D.

QUALITY HILL, ASHLAND, NEB., April 30, 1889.

"WANTS TO KNOW IF CHRONIC NASO-PHARYNGEAL CATARRH CAN BE CURED."

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: The answer to this question, which I find propounded by G. P. H. in THE MEDICAL RECORD of May 18th, can be made only in the same way that any similar question can be answered. Suppose anyone were to ask: "Can chronic nephritis, or chronic pneumonia, or chronic pleurisy be cured?" How might we reply to the query intelligently?

We would say it will depend upon the causation, duration, and complicating conditions present in the disease referred to. Certainly no sensible practitioner of medicine can be expected to furnish a panacea or a pet formula for the cure of a symptom in manifold pathological changes. Naso-pharyngeal catarrh, even "in subjects of the nervous and sanguino-nervous temperaments," may be allied with every constitutional dyscrasia, a result of some well-defined local change in the nasal passages, dependent upon disease in almost every remote organ, kept up by habits, professional pursuits, or immediate surroundings. It is time our notions in regard to the judicious handling of diseases of mucous membranes were readjusted. Our mental vision seems frequently obscured in regard to facts of daily observation. It will require a moderate return to the wisdom of those who have preceded us to appreciate that local treatment alone for chronic naso pharyngeal catarrh is irrational and correspondingly ineffective.

B. R.

IS THIS TRUE?—A correspondent writes: "It may be of interest to you and to the readers of THE RECORD to know that while the 'Code' of the American Medical Association is maintained as a bar against the Medical Society of the State of New York and its co-operative societies, it appears to be waived, at the discretion of the Chairman of Sections and of the Chairman of the Committee of Arrangements, in favor of non-professionals (of medicine) who are ambitious to use the Association for ulterior ends."

STOMACH VERTIGO is said by M. Bovet to be due to auto-intoxication. He has found in the urine and gas of the stomach and intestines, after vertiginous attacks, cyanides and sulphuric acid sufficient, he thinks, to have been the cause of the vertigo.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 12 to May 18, 1889.

By direction of the Acting Secretary of War, a board of medical officers, to consist of Lieutenant-Colonel ANTHONY HEGER, Surgeon; Captain F. C. AINSWORTH, Assistant Surgeon; and Captain JOHN O. SKINNER, Assistant Surgeon, will assemble at the U. S. Military Academy, West Point, N. Y., on June 1, 1889, to examine into the physical qualification of candidates for admission, and members of the graduating class. Par. 9, S. O. 108, A. G. O., May 10, 1889.

By direction of the Acting Secretary of War, the following named officers are detailed to represent the Medical Department of the Army at the annual meeting of the American Medical Association, to be held at Newport, R. I., on June 25, 1889: Major SAMUEL M. HORTON, Major JOHN S. BILLINGS, and Major CHARLES SMART, Surgeons. Par. 15, S. O. 110, A. G. O., May 13, 1889.

GORGAS, WILL'AM C., Captain and Assistant Surgeon, Will accompany the command from Fort Barrancas, Fla., and proceed with Battery H, 2d Artillery, to Fort Adams, R. I., to return to his proper station on completion of this duty. Par. 5, S. 108, Headquarters Division of the Atlantic, Governor's Island, N. Y. City, May 13, 1889.

GORGAS, WILLIAM C., Captain and Assistant Surgeon, now on duty at Fort Barrancas, Fla., will report in person to the Commanding General, Department of the Missouri, for temporary duty with troops in the field. Par. 1, S. O. 112, A. G. O., Washington, May 15, 1889.

GORGAS, WILLIAM C., Captain and Assistant Surgeon. Ordered to proceed at once and to report to the Commanding General, Department of the Missouri, for temporary duty in the field.

EKERT, R. G., Captain and Assistant Surgeon. By direction of the Acting Secretary of War, leave of absence for six months, on surgeon's certificate of disability, is granted. Par. 5, S. O. 109, A. G. O., May 11, 1889.

MOSELEY, E. B., Captain and Assistant Surgeon. By direction of the Acting Secretary of War, leave of absence for six months, on surgeon's certificate of disability, is granted. Par. 6, S. O. 109, A. G. O., May 11, 1889.

TESSON, LOUIS S., Captain and Assistant Surgeon. By direction of the Acting Secretary of War, is relieved from duty at Watervliet Arsenal, N. Y., and ordered to Fort Sidney, Neb. Par. 9, S. O. 109, A. G. O., May 11, 1889.

DAVIS, WILLIAM B., Captain and Assistant Surgeon. By direction of the Acting Secretary of War, the ordinary leave of absence granted him in Special Orders No. 232, October 5, 1888, is extended six months on surgeon's certificate of disability. Par. 20, S. O. 108, A. G. O., May 10, 1889.

KEAN, JEFFERSON R., First Lieutenant and Assistant Surgeon (Fort Robinson, Neb.). Leave of absence for one month, to take effect between June 1 and 15, 1889, is hereby granted, with permission to apply at Headquarters Division of the Missouri for an extension of fifteen days. Par. 2, S. O. 48, Headquarters Department of the Platte, May 13, 1889.

THE MANAGEMENT OF LABOR IN THE VIENNA HOSPITAL.—In a case of labor the following procedures are adopted: As the head comes to the vulva the parts are irrigated with corrosive sublimate solution, 1 : 5,000. Again, after the child is born, and after the placenta has been expressed, the vagina is again thoroughly washed out with the same solution; then a plug of iodoform and cocoa-butter (two per cent. iodoform) is introduced into the cervical canal, iodoform dusted over the external parts, iodoform gauze applied to the vulva, and a bandage over all and about the body.—*Occidental Medical Times.*

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Original Articles.

THE CARE OF THE TEETH, FROM A MEDICAL PRACTITIONER'S STAND-POINT.[1]

BY SAMUEL SEXTON, M.D.,

NEW YORK.

I SHALL confine my remarks to quite a limited consideration of dentition, caries of the teeth, and some of the neuroses resulting therefrom.

Though this subject has an extensive and valuable literature of its own, particularly in respect to the anatomy and pathology of the teeth, yet a wide field remains, in a medical point of view, for further observation and research, especially in respect to the treatment of affections influenced by dental irritation coming under the physician's care.

Were rational methods of research—such as have characterized the exact study of diseases of that group of special sense-organs comprising the ear, nose, and eye, and contributing so greatly to the success of specialism—brought to bear throughout the field of oral surgery, the marked indifference of physicians toward this specialty would soon cease to exist. There is every reason a more general knowledge of the teeth should prevail among medical men, when the well-known sympathy between them and their highly specialized neighbors is considered, since neither one of these organs, including the teeth themselves, can be long affected without disturbing the equilibrium of the nervous distribution about the head. It is well known that these different organs, when diseased, have a more or less retroactive influence on each other; the moment one of them is ailing, its morbid influences are propagated to the rest, though not necessarily affecting them all in the same degree. The most superficial knowledge, indeed, of the *modus operandi* of the complex nervous network involved, shows how puzzling under treatment for many of the diseases to which they are subject the behavior of the ear, nose, and eye at times must be, without taking into consideration the influence of diseased teeth. Of course in health these highly organized neighbors maintain an independent and separate existence, so to speak, their intimate sympathetic relationship scarcely manifesting itself perceptibly. Under certain conditions of the system, however, these organs become strikingly susceptible to disturbing influences, and so far as my own experience goes, from no cause more frequently than dental irritation.

There are certain periods in life when dental disturbances are most marked, and at such times the trouble is emphasized in run-down subjects; these periods are the first dentition of infancy, the completion of the second dentition at puberty, and the eruption of the wisdom teeth. During the first three years of childhood, while the first twenty teeth, comprising the first set, are coming, more or less irritation from soreness of the gums is generally experienced, and often the suffering from pain and sympathetic disturbance is very great.[2]

Dentition is spoken of as a physiological process, but nature very often dispenses rather torment than pleasure during the active stages of dental evolution. The clumsy work of the blunt tooth crown, slowly and painfully crowding its way through the tough gum tissue is a severe draft on the infant's store of nervous energy, and in many cases it can but be a source of wonder that they survive the struggle. From the irritability due to loss of sleep, headache, gastric disturbance, etc., many infants are kept in a run-down state all the time, and are, therefore, exceedingly susceptible to head catarrhs, and consequent aural, nasal, and ophthalmic complications, whose management is the more difficult, inasmuch as this causative influence, often the principal one, uninterruptedly continues.

One is surprised at the reluctance so often manifested in acknowledging the vast importance of dentition as a factor in infantile disorders, since instances are by no means infrequent where the trauma, due to the contusion of every tooth coming through the gums, is accompanied by convulsions or an exacerbation of the ear, nose, or eye trouble to which the process may happen to be particularly obnoxious. Fortunately, however, the cruel punishment meted out along with the first instalment of dental fixtures is followed by a period of comparative rest and recuperation from the exhaustive labor of dentition, lasting until about the sixth year.

During the interregnum between first and second dentition, or at any time after they are cut, the first teeth may decay prematurely as a result of malnutrition; or tartar may form on them. If catarrh of the gums now occurs, with suppuration of the socket and periostitis of the alveolar processes, besides the distressing oral irritation ensuing, some of the teeth may be lost.

Second dentition, often beginning at the end of the fifth year, but usually during the sixth year, is delayed a year or two in some feeble children backward in their development, though, before coming through, the site of the two lower six-year molars may long be seen beneath the gum, as indicated by a well-marked prominence.

Children may not suffer pain from the permanent teeth while pushing their way underneath the temporary set, though they frequently become very nervous indeed. Deciduous teeth now have their nutrition cut off, become gradually loosened by absorption, and are pushed out of the way as so much rubbish. In children having narrow jaws, the teeth, coming in rapidly, are liable to be crowded out of place. In ill-nourished children early decay of the teeth is to be feared. Where such mishaps take place, and fragments of shedding teeth remain attached to the gums, an appalling amount of irritation is set up in the mouth. Second dentition is often a severe ordeal, as may be surmised, and if children are badly fed and clad, and overworked mentally or physically, they are liable to give way under the strain. The exanthemata are illy borne during difficult dentition, and the teeth afterward give evidence of malnutrition, the arrest of development leaving various tracings upon them. The shape and strength of the teeth are often thus modified by constitutional influences during their growth. A number of these defects are known to occur with considerable uniformity, and have received appropriate names indicating their anatomical appearance. The writer has, however, looked in vain for characteristically marked teeth which might be traced to any particular disease, such as have been described by

FIG. 1.—"Hutchinson's" teeth.

[1] Read before the Practitioners' Society of New York, May 3, 1889.

[2] Persons interested in the study of the anomalies and diseases of the teeth, at all ages, in man, will find a classified collection, taken from cases in the author's aural practice, in the Army Medical Museum, Washington. The cases are represented in plaster casts which were made by the Messrs. Stebbins, dentists, of this city. Dr. Billings has had a descriptive catalogue prepared, and the collection is in a convenient place for study.

Hutchinson (Fig. 1), for example, as due to syphilis. While children subjected to the cramming process of our public schools have execrably bad teeth, it is alleged that among deaf children and others of slow mental development the contrary holds good.

The cutting of the four second molar teeth takes place about the twelfth year, and concludes the second dentition, excepting the wisdom teeth, which, on account of its importance, I have here regarded as a third process.

Until all of them are entirely through the gums the teeth of children should be kept under observation, since many nervous affections are due to the physiological disturbances they give rise to, and being unattended by pain are liable to be overlooked.

The *dens sapientiæ*, or third molar teeth, due about the seventeenth year, are often several years behind their time. In the lower jaw they are in erupting prone to take a header, so to speak, and land against the second molar, already firmly implanted in its place. The futile efforts, after a false start, to crowd into line with the other teeth is sometimes attended with agonizing pains, and is not always successful.

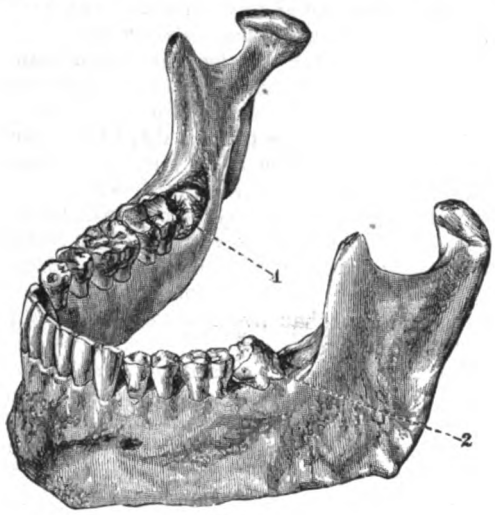

FIG. 2.

This is well shown in Fig. 2[1] (from a specimen in the author's possession). The right wisdom tooth, 1, is wedged in between the ramus or upright portion of the jaw and the second molar tooth; it has not, as yet, been able to leave its socket and cut through the gum. As the tooth is urged onward in the effort to erupt, it is forced against the sensitive root of the neighboring tooth, the pressure giving rise to much irritation. The fully erupted left wisdom tooth, 2, is inclined toward the first molar; the second molar on this side having been lost, room was afforded this tooth to cut through the gum.

Sometimes the irritation goes on for years, until nature seems to exhaust her expulsive forces without completing the process of eruption; pains may or may not be experienced; sometimes they seem to shoot from the tooth to the ear. Through nervous sympathy the ears are very often affected. The two upper wisdom teeth usually erupt a short interval after the two lower, and are cut with less difficulty; they often keep well out of view, presenting themselves to the buccal cavity.

Since these molars seldom occupy their normal place in the jaws they are comparatively useless, and it is generally believed that their extraction is no loss. But whether the pains of eruption are great or absent altogether, the ear, nose, and tonsils often suffer very much from the long-continued irritation through nervous sympathy. Sometimes a flap of the gum remains over the second and third molar teeth for a considerable time after they are cut, indeed until they assume their proper position on a level with the other teeth. This flap of hard tissue remains attached to the gum posteriorly, and is kept in an irritable condition by the mastication of food. The removal of these inconvenient flaps may be accomplished with the knife, shown in Fig. 3. Dr. Frank Abbott has devised a cutting instrument, worked with forceps-like handles, having a strong biting apparatus, into which the flap may be pressed for removal.

FIG. 3.

Caries of the teeth, owing to their insensibility and density, is a slow and insidious process, unless the teeth are abnormally soft. The patient may not be aware of any disease until either the central pulp or periosteal covering becomes inflamed and sensitive to thermic changes, produced by hot or cold fluids and the like. Susceptible persons, as is known, often experience excruciating pain, since both the pulp and periosteum are well supplied with sensitive nerves. If caries progresses too far before the diseased portion is removed, and the cavity stopped, sooner or later the inflammatory process extends itself from the pulp-chamber downward through the fangs into the cellular tissue underneath, where an abscess is liable to form. The purulent matter may, whether partially encysted or not, escape either through the hollow crown or find an outlet alongside the root. The former, however, is often prevented by the minuteness of the canal of the fang, or by the closing up of the crown cavity with food or by a filling. An abscess at the apical outlet of the fang may remain for a long time, the purulent matter finding an outlet into the mouth in the manner above described, causing foul breath, and sometimes a very disagreeable taste.

Drainage through the gum is probably facilitated when the tooth has been partially denuded by detachment of the periosteum. Some of the products of inflammation are, probably, taken up into the system directly from the abscess by absorption. So long as matter escapes one way or the other, the patient may experience but little pain or other inconvenience. Should the drainage be arrested from any cause, for example, as from taking cold after the crown has been stopped, or filled with impacted food, pain and swelling of the jaw takes place, Everyone is familiar with the comically swollen face so often seen in connection with a "gumboil," as the abscess accompanying the exacerbation is popularly called. It is a misnomer to designate these teeth as absolutely "dead" so long as any nutrition is derived from the periosteum of the alveolus, though the perhaps equally important source of vitality, namely, the pulp, may be wholly wanting. The ultimate career of carious teeth, where the pulp is absent, depends largely upon the state of the periosteal envelope; this, being very tenacious of vitality, may aid in retaining the tooth a long time. In many instances, however, the painfulness of exacerbations, after a tooth has been stopped, is unendurable, and the offender is extracted. In some vigorous persons a "dead" tooth may remain in the jaws, even after being filled, without perceptible irritation for a long time. But in most persons, especially those who have become run down, there is more or less nervous irritation, often without any perceptible disturbance in the tooth itself, which, together with the effects produced by a deep abscess in the gums, very decidedly affects the health in one way or another. Moreover, as the death of the tooth becomes more complete its position in the jaw is similar to the sequestræ of bone—it is more or less of a foreign body. On the removal of pulpless teeth, which have been filled for some time, a surprising quantity of fetid matter and highly offensive gas often escapes from the pus cavity.

Destructive inflammation sometimes is set up in the pulp of a tooth by the concussion of a fall or a blow, the tooth afterward becoming more or less dark in color, as in instances where the loss of the pulp occurs in consequence of caries.

[1] From the Ear and its Diseases: Sexton. William Wood & Co. 1888.

Carious teeth are not only often sensitive to thermic changes, as has been stated, but they may be tender to the impact of mastication or other force applied to them. When metal fillings are not well borne in the cavities of sensitive teeth, because of their readiness to transmit impressions of hot and cold, the pulp often becomes so painful that dentists destroy it entirely, afterward filling the pulp chamber and canals of the fangs with substances more or less indestructible. In this procedure the cavity of the tooth is made as free of carious tissues as possible before it is filled.

These teeth are tolerated in the jaws, after they have been stopped up, for a longer or shorter time. They are usually sensitive in some degree, as morbid action scarcely ever ceases entirely. Suppuration occurs in a very considerable number of instances, and pain is experienced in consequence of the pressure of retained secretions. Relief usually follows removal of the filling; if this is delayed a gumboil is established with an outlet on either the buccal or palatal surface of the gum, but most frequently in the former situation. The minute opening of these sinuses, to the inexperienced, is often difficult to find, and hence the existence of a suppurating cavity, consequent on a gumboil, is not always suspected, but may exist for years without discovery unless the outlet becomes obstructed. The roots of the teeth underneath the antrum of Highmore impinge closely upon this cavity of the upper jaw, and alveolar abscesses sometimes find an outlet into it; the purulent matter finally escaping through the nose.

The question of retaining these so-called dead teeth in the jaws is one to which I have been obliged to give much attention, since a very considerable number of persons coming to me with aural affections have nervous troubles associated therewith which cannot be successfully treated until the affected teeth are removed. I have found that the irritation propagated from diseased teeth, especially those filled after destruction of the pulp, has very often delayed or even prevented recovery. After the removal of such teeth recovery is often very rapid. Much has been said about the harmlessness of keeping diseased teeth in the jaws, but we must remember that the practice is never a safe one, since it ignores the very first principle of surgery, namely, the maintenance of drainage. Moreover, it is not possible to thoroughly clean out the canal cavity of most carious teeth, and even if this were accomplished, it would not prevent further necrotic action going on in the pulp-chamber, canal of the roots, or at the apical outlet under favoring circumstances, since the main source of nutrition is cut off from these parts. The filling material is sometimes pushed through the canal of the root into the tissues beyond. A case of this kind once came to me where the gold used in filling had thus kept up an irritation for more than ten years, which, though not appreciable locally, caused neuralgic pains in the head. Entire relief followed removal of the tooth which I now exhibit (see Fig. 4), that the members of the Society may examine for themselves. It would seem that such accidents as the above could not always be avoided, since the dentist must carry on his work in a region beyond the range of vision, and in structures whose size and condition are subject to great variation.

FIG. 4.

Though strong and healthy persons may tolerate the presence of these teeth under exceptionally favorable circumstances, it is generally a safe rule to always remove them from the jaws of delicate persons.

In this connection it is well to point out the possible, nay often probable, danger to health from all fixtures now so commonly worn in the mouth, requiring for their retention the remains of defective teeth, as caps, crowns, bridges, and other metal attachments. Pivot teeth and transplanted or replanted teeth[1] are likewise more or less detrimental, as are also ill-fitting and vulcanite plates.

Tartar cannot be regarded as a disease of the teeth, since its accumulation at any age is due, for the most part, to an excess of alkaline salts in the saliva. Its presence may afford a valuable indication in the treatment of subjects of a gouty diathesis.

In facial palsy, torticollis, chorea, and the like, the influence of diseased teeth and dentition should never be overlooked.

In the treatment of alveolar abscess by removal of the teeth, time should not be lost in waiting for swelling to subside before extraction; nor should pieces of roots or the alveolar process be left to work out themselves.

We all of us, I presume, are reluctant to criticise the well-meant endeavors of others, and in considering the ill-advised and injurious dental work done, sight should not be lost of the commendable advances made in dentistry during the past fifty years. And whatever may be said in respect to the meddlesome treatment of the teeth, especially carious teeth, now so much in vogue, it is largely due to the indifference of the profession toward oral surgery. It is true that medical men have taken up the study of the teeth from time to time, and have by their labors very much advanced dental anatomy and pathology; but it is not to the acquisition of medical knowledge that dentistry is indebted for the development of clever handiwork, but to the special smithcraft of recruits coming from the ranks of metal workers and other skilled mechanic arts.

So long as dentists are wanting in surgical knowledge, unattainable without due course of study, and surgeons taking up this profession are unable to acquire the practical mechanical skill requisite in dentistry, the status of dentists must needs remain undecided, for its recruits come from these extremes.

It would seem that the sooner a greater knowledge of oral surgery than generally prevails is made a requisite for graduation by medical schools, the better it will be for all concerned. But this cannot be accomplished by the establishment of dental colleges alone, for oral surgery differs from no other specialty in respect to requiring a regular medical training. Unfortunately, however, for the inauguration of any measures of reform in this direction, the apathy so long existing in the profession as regards the subject has practically excluded this branch of surgery from the domain of medicine, greatly to the disadvantage of those who are called upon to treat neuroses arising from diseases of the teeth. If medical colleges undertake to educate dentists it would be well to bear in mind the necessity for thoroughly equipped laboratories in which metal working may be taught.

12 WEST THIRTY-FIFTH STREET.

[1] It has been claimed that teeth may be safely put back in the socket, or even transplanted from a foreign source, and form a healthy union with the jaw. But this so far as known to the writer, at least, has not been satisfactorily demonstrated. Such teeth, it would seem, remain rather as artificial fixtures, becoming tolerated, so to speak, very much as ill-fitting plates do, without causing pain or discomfort even.

SURGICAL TREATMENT FOR LACERATIONS OF THE PERINEUM, WITH SOME IMPORTANT MODIFICATIONS.

BY JAMES K. KING, M.D.,
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THE operations and modifications that have been proposed and tried for laceration of the perineum are very numerous. It is not necessary to review them here. The careful and laborious studies of the anatomical structures and relations of the female perineum by Ambrose L. Ranney, of New York, and Hart and Barbour, of Edinburgh, and others have given us a much more definite knowledge of the structure, nature, and importance of the perineal body, and have led to a better understanding of the method of operative procedure which will most completely restore the parts to their original condition.

Dr. Thomas early taught (even when other prominent gynæcologists firmly denied its existence) that the perineum was a wedge-shaped body or inverted keystone, and

that it was all important as a support for the vagina and uterus. In the more recent operations much attention has been given not only to uniting the pelvic fascia and the perineal floor, but the whole perineal body. The old methods, with quill sutures and the like, have been abandoned. Later came the plan more particularly advocated by Dr. Emmet, of employing a number of deep perineal sutures, generally silver.

This operation with its numerous modifications, was the best one devised for a long time, but it has always had two serious objections, and, as Dr. Dudley has shown, has not given complete satisfaction. First, stitches, whether silk or silver, introduced in this way deep in the tissues pass transversely to and include important perineal vessels, cause considerable swelling, and are always painful. Second, deep stitches introduced in this direction when gentle traction is employed resemble in a picture the strings of a harp, but when they are drawn firm enough to keep the parts in apposition, as they always are before being twisted and tied, the soft tissues are dragged downward and the perineal body is shortened from above downward and the posterior vaginal wall is drawn down, and with it the uterus, and this increases the rectocele, although the vaginal orifice is made narrower and hides it from view, results which it is most desirable to avoid.

These defects in the operation have led surgeons, both in this country and abroad, especially in Germany, to develop other methods of operating. Dr. Henry O. Marcey, of Boston, devised his perineal pins which are ingenious and an important addition to the surgery of the perineum, and did much in the way of preserving the anatomical relations of the perineal body. Dr. J. H. Kellogg, of Battle Creek, Michigan, has modified these pins by making them straight, and fastening the vaginal ends with thread and the perineal with silver wire, thus greatly facilitating their removal.

Lawson Tait, Alexander Simpson, and others varied the operation by dissecting up a vaginal flap, and bringing the raw surfaces together with silver sutures, thus repairing the laceration without any loss of tissue. The operation of my friend Professor Simpson is an excellent one for many cases of complete laceration.

This method has had many modifications, Dr. N. Schinder, of Cleveland, dissects up the vaginal flap, divides it in the median line, cuts away the excess of mucous membrane, brings the raw surfaces together in the usual way with deep sutures secured externally, and then stitches the mucous membrane to the lower edge of the vagina, thus forming a cover over the line of union.

But general opinion seems to be growing rapidly in favor of some form of the operation as it has been made in Germany for some years past by Hegar, Kaltenbach, Martin, and others, by which the deeper structures are brought together with buried sutures of some animal substance, as kangaroo, catgut, etc., thus building up a firm perineal body, and over this the mucous membrane and perineal surfaces are united by either catgut or silk sutures.

Dr. L. P. Burt, of Boston, who with Dr. E. W. Cushing has done excellent work in this line, has ably presented the advantages of this method in his article in the *Annals of Gynæcology* for September, 1888.

Dr. A. Palmer Dudley, in the *Journal of Obstetrics*, etc., for December, 1888, presents, in a valuable paper, many new and important facts on the surgery of the perineum, which are of practical value.

In the *New York Medical Journal* for December 29, 1888, Dr. W. A. Wathen, of Louisville, Ky., takes up the other view of the subject, and argues in favor of preserving the tissue and doing the flap or splitting operation after the manner of Tait and others. He presents strongly the importance of uniting the ends of the separated muscles, a matter which is quite generally recognized by operators in the surgical treatment of the perineum. But while these operations make a strong pelvic or perineal floor, they all come short, as Dr. Burt has clearly shown, of completely restoring the whole perineal body and correcting the conditions which are the result of the laceration. The only complete and satisfactory operation is one which accomplishes all these objects.

After a large number of operations and watching the work of other men for years, it seems to me that the only operation which does this is the one in which the buried suture is used after the manner of Martin, or where the vaginal as well as the perineal sutures are employed in a manner similar to that practised by Dr. Dudley, or as in the modified operation which I am about to describe. I much prefer the buried suture in addition to the vaginal and perineal continuous or interrupted sutures, because in this way the most normal perineal body and strongest support can be obtained. The objections to the splitting or flap operation, and to those in which the sutures are introduced from and secured on the perineum are:

1. They only restore the floor or lower part of the perineal body.
2. They do not correct the rectocele.
3. They do not relieve the dragging on the posterior wall of the vagina.
4. They do not form the upper portion of the perineal body anew and give the needed vaginal support to the prolapsed uterus.
5. The flap operation does not remove the old cicatrices.

Little has been said about this last point, but I am certain that in many cases it is a matter of great importance. I operated in one case in which the two large, long scars in the latero-posterior walls of the vagina were extremely tender and caused much reflex pain up the spine. When these were carefully removed, the pains and tenderness disappeared. I have noticed several other less marked cases. This, in my judgment, is a point that should be kept in mind—always remove the cicatrices as far as practicable. If a cicatrix in the cervix uteri will cause so many reflex symptoms why will not a larger one in the vagina, which is much more sensitive, cause many local and reflex disturbances?

I will now describe, as briefly as possible, the method I have adopted, because the results seem to fully warrant it.

Dr. Emmet prescribes, very carefully, the plan for preventing rectocele and prolapsus after delivery, when there occurs extensive laceration of the perineum. This will work well if the patient is under the care of a specialist, but in my own case, and I am inclined to think the same is true of most men who operate much on these cases, the patients who come have had no special care and only come because they want to be relieved of the distressing symptoms. Then we generally find the labia separated from contraction of the muscles and fascia, rectocele, often vesicocele, and the posterior wall of the vagina dragged down, and with it the cervix, into the axis of the vagina and prolapsed.

The object of the operation is to correct as far as possible all these conditions. We make the denuded surface extend from the posterior remains of the hymen on either side back to the median line, and this double triangle to converge to a point as high up as the vaginal wall is distended, which is usually just above the rectocele, taking special care to uncover as far as possible the central tendon and the ends of the perineal muscles on either side (see Fig. 1). The first stitch introduced is the most important one of all, and the one to which I desire to call special attention. It is a long silver suture, and is introduced in this way: A large-sized curved Emmet's needle is armed with fine, stout silk for the purpose of drawing the silver through, or the needle, if care is exercised, can be threaded with the silver wire. The needle is entered at the point of the triangle, at the posterior border of the hymen (care being taken to enter the needle in the denuded surface so it will not cause pain afterward), and is carried in a double curved line downward and backward so that in the median line or posterior part of the vagina it will pass under the denuded surface about three-eighths of an inch from the lower edge of the denuded surface (see

dotted line of suture in Fig. 2). This suture passes under the tissue out of sight all the way, until it emerges at a corresponding point on the opposite side. It is drawn through until the ends are equal, and then is not twisted, but left loose. The reason for this will appear later. The special advantages of this suture are as follows :

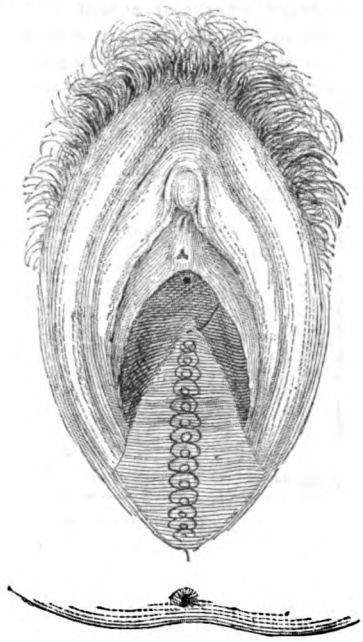

FIG. 1.

1. When drawn moderately tight it holds the perineal body firmly together at its thickest point.

2. It not only furnishes a firm support, but this support is in the natural direction of the constrictor vaginæ and other muscles.

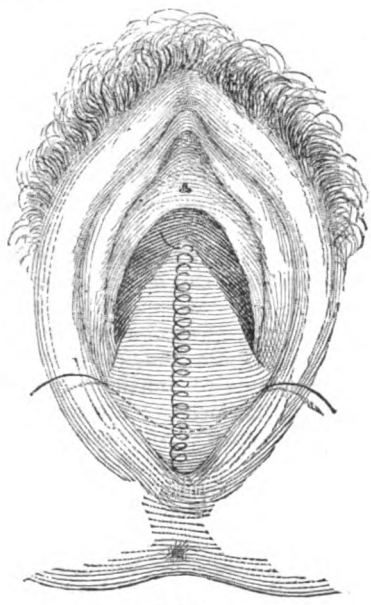

FIG. 2.

3. It brings together the separated transverse perinei muscles, and gathers up the perineal fascia.

4. It does not constrict as many vessels as a deep suture secured on the perineal surface.

5. It does not cause swelling and pain as do the deep perineal sutures.

6. With this strong support much less of the buried suture is required to hold the parts in apposition. This last point is of great importance. If too much catgut is buried in the perineum, one of two results will follow, either the tissues will be too much constricted and the vascular supply diminished sufficiently to prevent healing, or there will be more than will be absorbed and so prevent complete union.

When this special wire suture is used it furnishes the main support, and just enough buried catgut is needed to hold the parts in apposition, and complete union takes place rapidly.

The next step in the operation is as follows : A medium-sized half-curved Emmet's needle, threaded long with No. 3 or 4 catgut, which has been *carefully sterilized*, is introduced into the denuded tissue about three-eighths of an inch from the upper angle, with the forefinger of the other hand in the rectum, and with an over and over stitch, giving the needle a downward and inward curve to the median line, and then outward and upward to correspond, the tissues at the bottom of the wound are brought together. This stitch is carried down to just below or behind the point where the silver suture crosses, and then in the same way it is turned and carried upward, bringing the tissues together over the first line of stitches until the upper angle is reached, then the needle emerges on the mucous surface on one side of the angle, and the next row of stitches, giving the needle the same curve, which draws the perineum

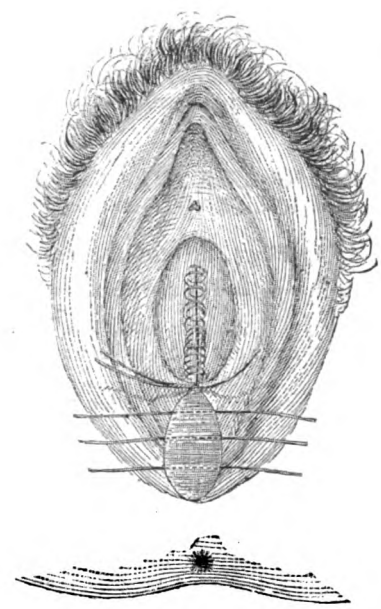

FIG. 3.

upward and forward as it is formed, brings the edges of the mucous membrane together over the two rows of buried stitches. This curved stitch has the same effect in drawing the perineum and vaginal wall upward which Dr. Dudley has described in his excellent paper. He forms an angle with the apex downward and removes the needle, and re-enters it on the other side of the median line with each stitch. I cause the needle to make a curve which seems to give the same result and has the special advantage of saving much time. This last row of stitches is brought down to where the silver suture enters and is secured. It will be observed that as the perineal body is thus built up and the two sides approximate each other the curve occupied by the silver wire has become much shorter. The wire slips out of the tissues as the perineum is raised upward and forward, and this is the reason why the ends are to be left loose at the beginning. The silver suture is now secured in the usual way, but does not need to be drawn as firmly as if there were no buried sutures used. It will now be evident as we approach the third division of the sutures, those in the perineum, that only a small portion of the perineal body, that included within the dotted line as seen in Fig. 3, remains to be brought together. The edges of the central tendon, the muscles, and, as far as possible, the fascia, are united by interrupted silk sutures, using as few and only as deep as is necessary to secure apposition. Finally, a continuous catgut ligature with an over and over stitch, brings the edges of the skin together and forms the raphé. The entire line of sutures is dusted with iodoform, the water drawn, unless there

is some special contra-indication, then the douche is used after each evacuation of the bladder. The bowels are confined for from four to eight days, according to circumstances. It is a much disputed point as to whether or not it is better to move the bowels every day, or to confine them for a number of days. It seems to me the question depends on the variety and extent of the operation. In the flap or splitting operation, or any one in which only the lower portion of the perineal body has been restored, there is little danger of disturbing the line of union when a loose movement is secured every day. If, however, the whole perineal body has been restored there is much danger of disturbing the healthy process in the upper or vaginal portion, and it is better to have the bowels quiet for four days and longer if no serious inconvenience arises. I remove the silver sutures the seventh day, move the bowels carefully the eighth day, and allow the silk stitches to remain until the ninth day. In cases of complete laceration the rectum and sphincter ani are sutured, and then the rest of the operation is the same as described. In cases where the vagina is much relaxed, posterior colporrhaphy can easily be performed as a continuation of this operation.

I am sure that a fair trial of this method of operating will give the most gratifying results.

IRRITATION AND THE TREATMENT OF RINGWORM OF THE SCALP.

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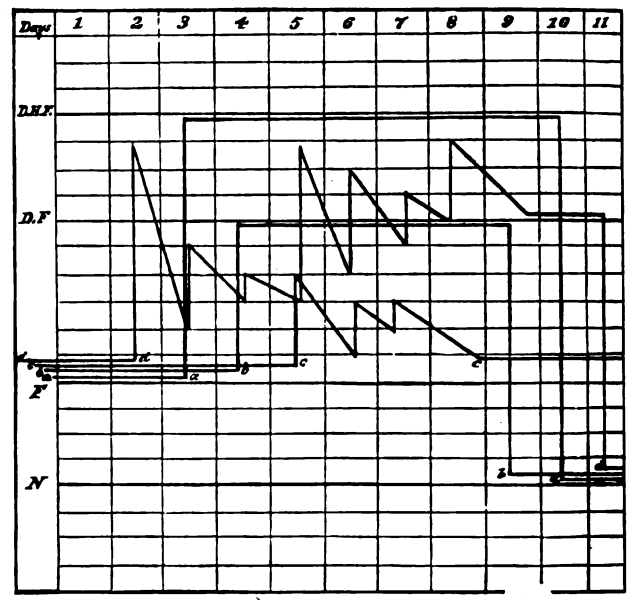
In a "Rapport à l'Académie de Paris," M. E. Besnier, one of the most prominent French dermatologists, recently said:

"In the present state of science we have no therapeutical agency at our disposal which has the quality of modifying the living cell in such a manner as to render impossible the germination of the microphyte or microbe without damaging at the same time the vitality of the cell, causing local destruction, or even death of the whole organism. Our progressive tendencies should be directed to the study of this question far more than to the search for new parasiticides of imaginary value. The modification which living organic tissue may undergo is plainly shown by the various kinds of vaccination, rendering the cells unfit for the growths of certain microbes. It is shown in regard to the microphytes by the changes in the development of the hair, which, in the adult, becomes absolutely refractory to the germination of trichophyton, while it offers a favorable soil to other parasites."[1]

It is a fact that our therapeutical armamentarium has become very large, and that we do not need any more new antiparasitic remedies for the cure of ringworm of the scalp. As to the new methods devised in order to make remedies sink deeply into the skin and hair follicles, where they are supposed to meet and kill the parasite, I think that they are based on some primitive pathological knowledge. As Professor Campana[2] has recently shown trichophyton tonsurans may invade the deeper layers of the skin and properly vegetate in them. The exact mode of action and the proper method of applying the remedies undoubtedly calls for some further investigation. Do the antiparasitic remedies act as such, or by virtue of their quality as irritants? Does the principle of managing ringworm of the scalp consist in producing in the hair follicles an inflammation sufficiently acute to gradually lead to the destruction of the fungus,[3] or can remedies which cause no perceptible irritation surely, though in some cases slowly, exterminate the disease?[4] These are questions raised long ago,[5] and even nowadays not yet definitely settled. So much, however, is evident to a certainty, that, when treating cases of ringworm of the scalp, we have to take special care in properly controlling the irritation produced upon the skin by the remedy which we are using. In doing so we will carry out not only an important precautionary measure, but also make good use of whatever beneficial action irritation, properly controlled, may have in bringing about a cure. What I mean is plainly shown in the accompanying diagram. We take the normal condition of the skin *N* for a basis.



The next higher degree of irritation, *F*, is that caused by the presence and growth of the fungus. *D F* stands to mark the amount of irritation which is necessary for the destruction of the fungus, and *D H F* for that necessary to cause the inflammation and destruction of the hair follicles. *N* and *F* are conditions which present themselves to the eye of the observer, and can therefore be accurately estimated by the latter. They vary, of course, in every individual case, but bear a certain proportion to each other, which we are able to ascertain, and which thus enables us to draw a conclusion on the situation of *D F* and *D H F* in our curve. If the normal condition of the skin of a patient is a delicate one, the growth of the fungus needs very little intensity to cause a lively irritation of the skin; if, on the other hand, it is more indolent the irritation will hardly be noticeable.

These and similar considerations enable us to make a pretty good guess as to the amount of irritation which would cause a destructive inflammation of the skin (*D H F*), an accident which we always have to avoid. We are accustomed to draw a conclusion in just the same way from the amount of redness and irritation present in a case of eczema, and to settle accordingly on a soothing or more or less stimulating plan of treatment.

In gonorrhœa—to take a disease of an entirely different character for an example—the subjective symptom of pain, together with the amount and aspect of the discharge are sufficient indications to influence our selecting an injection of varying strength, quality, and mode of application, no matter if we start with the intention of killing the gonococcus or applying an astringent to the mucous membrane of the urethra. The amount of irritation necessary to destroy the fungus (*D F*) is not known to us, but it must be located between *F* and *D H F*. We have to endeavor to strike this line, wherever it may be situated, between *F* and *D H F*. We reach it in exceptional cases in our first attempts at treatment, effecting a surprisingly quick cure. In the majority of cases, however, we are accustomed to feel our way, and, by frequently changing our remedies in quality and strength, or by suspending treatment entirely for a while, to see if we have been successful in reaching it.

[1] Feulard: Teignes et Teigneux. Paris, 1886.
[2] Archiv fuer Dermatologie u. Syphilis, January, 1889.
[3] Thin: On the Treatment of Ringworm, p. 52. 1887.
[4] Jamieson: Diseases of the Skin, p. 470. 1888.
[5] Sir Erasmus Wilson: Cutaneous Medicine, etc., p. 383. 1865.

Let us now first trace in our curve the course which nature sometimes takes in order to cure ringworm of the scalp, and let this serve as a lesson. It is the condition known as "kerion," rarer in this country than abroad,[1] occurring idiopathically as well as by the use of popular remedies, or by overtreatment of the disease. The irritation arises often suddenly, sometimes gradually, to a degree sufficient to cause destructive inflammation of the hair follicles (*D H F*). This maximum of irritation lasts for days, and even weeks, and then disappears, allowing the skin to return to its normal condition (see line *a*, in the curve). We have carefully to avoid the production of kerion, because it results in permanent baldness of the affected spot. It teaches us, however, that in order to cure the disease a state of irritation is necessary, which has to continue uniformly for a certain period. If we knew exactly the location of *D F*, that is, the amount of irritation necessary for the destruction of the parasitic vegetation, and if we could keep the skin in this irritated condition for a certain length of time, we would have reached the ideal. This is demonstrated in our curve by line *b*.

Being in the dark about the location of *D F* we generally commence, and frequently continue, with an insufficient manner of treatment, as shown by line *c*. Afraid of the danger of causing deep inflammation of the skin, kerion, we select a remedy the application of which produces an irritation not intense enough to be destructive to the parasite (*D F*).

And if even we reach *D F* we will have produced only a passing irritation which quickly decreases, and the continual application of the remedy of the same strength will finally result in adding only some irritation to that already existing on account of the presence and growth of the fungus. This is explained by the general law that irritants of uniform strength continually applied to the skin lose their irritating qualities.

Cases of so-called irritated ringworm are often the consequences of this defective plan of treatment.

What would now be the best way of profiting the most by the irritating qualities of whatever remedy we apply?

First, to produce an intense irritation of the skin not far from destruction (*D H F*); we have to do or superintend this personally, because our success depends on our carefully considering the normal condition of the skin and the amount of irritation produced by the presence of the fungus. An additional point is this, that the skin of those spots which have been carefully epilated by an experienced hand is able to stand a good deal more of irritation than the rest of the scalp.

After the irritation caused by this application has mostly subsided, a milder remedy is applied to the patient's head, by a nurse or an attendant, at regular intervals. The first or stronger application is then repeated by the physician himself, and this in turn is followed by the regular use of the milder application.

As is shown in the curve (line *d*), the amount of irritation, steadily increasing, reaches *D F* and remains near this line for a certain period.

Being asked through the kindness of Dr. S. Baruch to treat an epidemic of ringworm, which had broken out on the scalp of some of the inmates of the New York Juvenile Asylum, I had ample occasion to ascertain the fact that it is of great practical value to have constantly in mind the points I have mentioned above.

From the notes which I have collected while treating the cases I will select those which have some reference to irritation.

Ninety-eight children were affected by the disease, which presented itself mostly in its chronic form. There were four or five cases of so-called irritated ringworm and two of true kerion. In age the children ranged from six to fifteen years. Microscopical examination showed the presence of the fungus in the scales and hairs taken from the heads of most of the patients. Treatment was begun in the following manner: The hair was cut short with a pair of scissors close to the scalp and some of the affected spots carefully epilated. It is absolutely necessary, I think, that the physician himself, or an experienced nurse, practise epilation. To leave this important part of the treatment to a hand untrained for the purpose not only recalls to mind the cruel times of the "calotte" by its being very painful, but is also the source of much undue irritation, which it is very important to avoid, as I have said above.

A lotion consisting of simple tincture of benzoin and bichloride of mercury, in the proportion of one to three hundred, was then applied all over the scalp.

A soft nail-brush was used for this purpose, and the lotion brushed into the scalp quite vigorously. The length of time and the mechanical force consumed in this process was modified according to the condition of the normal and diseased parts of the scalp.

The nurses were instructed to wait until the irritation set up by this measure had disappeared, and then apply daily a salve of ten per cent. of salicylic acid with vaseline as a constituens. As a rule, the irritation had passed away the next morning and the salve could be used. If, however, the irritation persisted, or even pustulation occurred, the scalp was left entirely alone till these symptoms had disappeared. I selected the vaseline as a basis for the salve, in preference to greasy matters, because the latter are liable to become rancid and consequently irritating beyond control.

Epilation followed by the application of the lotion was repeated in the same manner in intervals of a week. I gradually increased the strength of the lotion, as well as that of the salve, till the former reached two to three hundred and the latter twenty per cent. It was astonishing how quickly the disease yielded to this treatment and the symptoms of irritation or inflammation disappeared. Whenever a case seemed to be cured treatment was suspended for a fortnight and the patient discharged if no sign of the disease had reappeared. From time to time the discharged children were examined again. I began treatment in the commencement of October, and at the end of February nearly half of the number of patients were cured.

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[1] Jackson: Diseases of the Hair and Scalp, p. 211. 1887.

OVARIAN PROLAPSE.[1]

By E. S. McKEE, M.D.,

CINCINNATI, O.

Definition.—A dislocation of one or both ovaries downward, and usually posteriorly. It is true that it is often rather a symptom than a disease, but it displays certain symptoms peculiar to itself.

Frequency.—It is much more common in multipara than in nullipara. It was found by Mundé in 77 out of 145, palpable out of 1,600 unselected cases. From my own experience I am convinced that ovarian prolapse is far more frequent than generally supposed. Many patients complain of a dull, sickening pain, usually referred to the left inguinal region, and in many instances, if investigation be made, it will be found due to ovarian prolapse.

Varieties.—We may have:

1. Retro-lateral: into the lateral pouch of Douglas.
2. Retro-uterine, in the true pouch of Douglas.
3. Ante-uterine: in the anterior or vesico-uterine pouch; very rare.
4. Into the infundibulum of the inverted uterus, which is a position of the greatest rarity, one case only occurring in the practice of Professor Simpson, of Edinburgh.

Etiology.—Factors which lead to an increase in weight, induce traction from below or pressure from above, or cause feebleness or lengthening of supports,

[1] Read before the Kentucky State Medical Society, May 9, 1889.

come under this heading. Among the predisposing and exciting causes may be mentioned the conditions present in the puerperium. These favor displacement for two reasons: The normal ascent of the uterus during pregnancy may stretch the ovarian ligament, and the ovary may not return to its normal size after parturition. Parturition is especially prone to this trouble, if often repeated. Simple congestion resulting in enlargement of the ovary may cause it to descend. Congestion may be an occasion, and again a result, of the displacement, which usually aggravates it exceedingly. Other causes are displacements of the uterus, especially the posterior ones, and prolapsus. The violent straining at stool which is sometimes occasioned by retroflexion may be the determining event of the displacement.

Inflammatory conditions due to cellulitis and to peritonitis, tumors, ascites; vesical, fecal, or gaseous distention pushing from above; the feebleness and lengthening of supports resulting from subinvolution, frequent parturition, and general debility. In rare instances acute displacements may be caused by sudden jolts or jars. We may have this displacement owing to simple increase in weight of the glands, prolonged hyperæmia from sexual excess, or chronic oöphoritis. A displaced ovary is at once the cause and the result of disease. A perfectly healthy ovary chained down by a retroverted uterus has its circulation at once more or less obstructed, and it then becomes the seat of chronic changes. This will more probably occur if buried in adhesions. Accompanying this dislocation some uterine tension is usually found which we must consider as cause or effect. This cannot well be otherwise, for the vascular relationship between the two is so close that turgidity in the one means erectility in the other. In the displacement of the ovary downward into Douglas' pouch, the most common form, the causes are more frequently gynecological than obstetrical. The pressure of the sigmoid flexure on the left side accounts for the more often occurrence on that side. Fulness of the intestine is a common cause. Robert Barnes has observed that the Douglas pouch is much deeper on the left side than the right. The left ovary is more usually prolapsed, not only because it is more subject to disease, but by reason of its greater enlargement during pregnancy. There are several influences which tend to produce this condition. Chief among these is the valveless state of the left spermatic vein, which makes this vessel easily affected by an obstruction in the general circulation. The conformation of Douglas' pouch allows the left ovary to sink lower than the right, and makes it more accessible to the examining finger. Simultaneous primary dislocation of both ovaries is not common. Very thin women are more prone to this disease than fat ones. Congenital malformation may occur, and subinvolution of the broad ligaments will in some instances allow the prolapse of the ovaries when not enlarged.

Pathology.—The enlarged ovary usually occupies an abnormal position, often very sensitive to the touch, and sometimes fixed by peritonitic adhesions, also often accompanied by displacements of the uterus. The usual mode of procedure is for the ovary, generally the left, to sink downward and backward, and at the same time to describe an arc toward the median line. The Fallopian tube and ovarian ligament form chords. This brings the ovary behind the uterus, unless the latter remains in its normal position. The ovary in its descent reaches that portion of pelvic fossa just above the level of the sacro-uterine ligament known as the retro-ovarian shelf, where it may remain. As this space on the left side is encroached upon by the rectum, the corresponding ovary is inclined to slip down still further into the cul-de-sac of Douglas. When both ovaries are prolapsed the left lies at a lower level, and is more accessible to the examining finger. A perfectly healthy ovary lying in the posterior cul-de-sac is placed under the most favorable conditions for congestion, mechanical injury during sexual intercourse leading to subacute inflammation which is attended by peri-oöphoritis and fixation of the gland in its abnormal position. Where due to subinvolution the ovary follows the uterus.

Symptomatology.—Spasms of radiating, throbbing, neuralgic pains of a sickening and unnerving character, often occurring suddenly, are felt in the pelvis and surrounding parts. Marked pain on walking and coition, with torturing pain on defecation caused by the grating of hardened fæces on the tender glands, especially in prolapse of the left ovary, are experienced. Sickness and nausea on pressure by the examining finger, similar to that felt on squeezing the testicles, dragging sensations in the groin and down the thighs, nervous symptoms with general irritability, severe hysterical symptoms, and melancholia, are among the indications. These are local and general, as a rule very well marked and severe. These symptoms much resemble those due to severe retroflexion of the uterus. Having associated the two conditions, ovarian prolapse and retroflexion, the symptoms may be doubly intense. Derangements of menstruation, usually menorrhagia, are sometimes present. General reflex neuralgiæ are often found, a frequent seat being in the breast, and in fact usually confined to the side on which the ovary is affected.

Physical Signs.—Bimanually we feel, in the true or lateral pouch of Douglas, a small body or bodies exquisitely tender and lying distinct from the uterus; on rectal examination the ovary is felt with unusual distinctness. The finger should be carried as far upward on either side of the cervix uteri as the vaginal wall will permit, and then brought downward toward the sacrum, so that if the ovary is caught it will be between the examining finger and the sacrum. By this means it can be outlined by palpation, and its sensitiveness determined. The degree of mobility or fixation can also be thus determined. In many instances the ovary lies so exactly central that it is impossible to tell whether it is the right or the left, until the other one is found in its normal position. If the prolapse is incomplete the ovary is generally discovered at one side of the uterus, usually a little above the junction of the body and the neck.

Diagnosis.—As a general thing this is not difficult. It may be distinguished from enterocele by not being smooth and globular, nor giving rise to gurgling on compression, or resonance on percussion. It may be differentiated from epiplocele by the absence of the peculiar, soft, doughy feeling and the irregular, ill-defined outline of the latter. A displaced ovary may be diagnosed from enlarged inguinal glands by the smaller size and simultaneous appearance of several glands in the same situation in the former case. A prolapsed ovary in Douglas' space may be distinguished from a posterior uterine displacement or tumor by recto-vaginal examination and the use of the sound. As a rule, in displacements of the ovaries there is pelvic tenesmus and pain on walking or standing, relief being obtained by the recumbent position. If the prolapsus is complete the ovary feels not unlike the fundus uteri and gives the impression of retroflexion. The tenesmus and pain in walking is a discriminating point against inflammation of the ovaries. Differentiation from retroflexion can be made by the peculiar sensitiveness of the ovary to pressure, and by the fact that the finger can usually be passed between the uterus and the ovary. Should doubt still remain, the passage of the sound will settle the question. In case both retroflexion of the uterus and ovarian prolapse should exist, we can solve the problem by lifting the uterus, by means of the sound, off the ovary, which remains *in situ*. The prolapsed ovary may be mistaken for a pedunculated fibroid tumor. It may be distinguished from scybala by the absence of the mobility, softness, and comparative sensitiveness.

It is good practice to explore the posterior cul-de-sac while the woman is in the left lateral position, as the perineum can be pushed upward at least half an inch, and the finger reaches that additional distance along the posterior

vaginal wall. Rectal examination will enable one to reach at least an inch higher up into the pelvis than by an examination per vaginam. In obscure cases this mode is of great service. If a thorough examination is not easily attained, an anæsthetic will aid in clearing up the difficulty. Sensations of size conveyed by touch in the diagnosis of this trouble are deceptive. As a rule, prolapsed ovaries are larger than they appear, since only a small portion of their surface is accessible to the finger tip. In the diagnosis of mobility of the ovary, we must not mistake elevation of the pelvic contents en masse for actual lifting of the ovary.

PROGNOSIS.—The question as to whether the displacement can be permanently overcome depends upon its duration; upon the condition of the ovary, whether normal or diseased, and whether there are other complications, such as adhesions, retroversion, or retroflexion of the uterus. In cases of recent date which are free from complications, permanent relief may be obtained. In many involved cases all local treatment fails. Though the life of the patient may not be directly implicated, yet the ovary after a time is liable to become congested and sensitive, and ultimately result in inflammation and changes of the organ.

TREATMENT.—Is essentially local, and unfortunately the results are not especially brilliant. Oöphoritis being present, sexual intercourse, if permitted at all, should be carefully regulated. The bromides and ergotin exert a happy effect. If the prolapsed ovary is movable it may in some cases be lifted out of harm's way by a pessary. Many cases can be relieved or cured by keeping the intestines empty with mercury. Should the organ be very sensitive or irritable, this condition should be removed by the use of tampons saturated with glycerine. Great benefit is to be derived, in displacements with parametran infiltrations and hyperæmic conditions of the uterus and adnexa, from a firmly packed column of cotton. The advantage of the cotton tamponade is that it accomplishes the same result as a pessary without exercising the same pressure. Bozeman's method of packing or columning the vagina, with the patient in the knee-chest position, offers superior advantages, since it includes the two elements—pneumatic reposition and firm, continual pressure. Suppositories of iodoform, belladonna, tannin, or iodide of lead, applied directly to the sensitive spot and held there by tampons, afford relief. After congestion and pain are alleviated, in some cases a pessary will answer very well, but in my experience these instruments have been of little benefit. The one used has the cross-bar made broad and thick. The bulb pessary aims at the greatest degree of distention of the postero-formix, and in this way to elevate the displaced organs. Many modifications of lever pessaries have been devised—Thomas' bulb pessary, Gehring's retroversion pessary with central depression, or one of Thomas's bulb pessaries similarly or unilaterally bevelled out. The retention of a prolapsed ovary by means of a pessary is by no means so easy as the fundus uteri. The extreme mobility of the ovary renders it very liable to slip down behind the pessary, when the pain thus occasioned will soon demand the change or removal of the instrument. An air-cushion or Gariel pessary may be introduced with advantage. These lessen the pressure, but soon lose their shape. An indentation in a hard-rubber pessary at the point where it presses on the ovary, sometimes works like a charm. Cases in which pessaries are of benefit are usually those in which there is accompanying uterine displacement. In simple ovarian prolapse they usually do more harm than good.

If the ovary has become fixed in an abnormal position as a result of peritonitis, the prospects of success from palliative treatment are not encouraging. The persistent use of the tampon, hot water injections, local applications to the formix, and cotton soaked in some emollient, will prove of benefit. We should explain the condition of the patient to her, tell her it is a case of months, not weeks, and we should patiently and persistently treat them for six months before the question of laparotomy is seriously considered. Though this routine treatment may appear very unsatisfactory, yet it is not to be despised.

For severe pain in the ovaries, rectal suppositories may be used containing cannabis indica, belladonna, iodoform, or opium, and rectal injections of hot water as hot as can be borne. Blisters are sometimes of value applied over the ovarian region. Absolute interdiction of sexual intercourse is necessary in many cases. Rest in the recumbent position for an hour, two or three times a day, is of great benefit. An abdominal brace will sometimes help by forming a sort of shelf on which the viscera may rest, and thus relieve the ovaries of a portion of their load. It also aids by narrowing the pelvic inlet and by swinging the pelvis backward.

Although pregnancy is a cause of ovarian prolapse, in my experience it has in several instances proven a cure for the disease. If pregnancy is oft repeated it is frequently an etiological factor, but if occurring at periods separated by considerable intervals, it may become a remedy where ovarian prolapse exists, as when the fundus uteri lifts itself out of the pelvis it lifts the ovaries with it. When the pregnancy is completed the circumstances may be more favorable, and the ovaries remain in their proper place.

The method of Dr. Henry F. Campbell, of Augusta, Ga., described in his excellent papers on posture in the treatment of pelvic troubles, relates the success attending the pneumatic reposition of the displaced organs. This is done by placing the patient in the knee-chest position and opening the vagina to allow the air to distend it; it may be used with much benefit in those cases where the ovaries are freely movable. If this be repeated at least twice daily, the strain on the relaxed ligament and vessels is so relieved that the latter tend to recover their tone, and the patient experiences a decided amelioration of her symptoms. If she wearies of this position, after filling the vagina with air she can lie over on her side with a pillow under her hips and her shoulders low, thus keeping up the position without tiring herself. Goodell recommends that in this position the patient separate the labiæ with her fingers and allow the air to enter. Campbell uses a glass tube, which is inserted by the woman. Both of these means are unnecessary, as the ovaries will resume their proper place from the knee-chest position alone. Dr. Campbell advises that the woman kneel on the bed with her body bent forward until her chest is brought down to the surface, head turned to one side, and cheek resting on the palm of the corresponding hand. Her knees should be about ten inches apart, and her thighs perpendicular to the bed. If she now refrains from straining, and breathes naturally, the force of gravity will do the work. Such replacements are of great value. They replace the organs, relieve congestion, give the limp ligaments a chance to shrink, and keep the truant ovaries at home.

Extirpation of the ovaries, a *dernier ressort* for this trouble, sometimes becomes a necessity. The vaginal operation, which at first was considered especially applicable to these cases, has not justified the hopes of its originators.

Oöphorhaphy in place of oöphorectomy, as a means of treatment, has been highly recommended by Imlach, of Liverpool. In the virgin the ovaries slope inward, forward, and downward, and are suspended by the so-called infundibulo-pelvic ligaments, or peritoneal folds of the broad ligament, stretching from the pelvic brim to the infundibula of the Fallopian tubes, and contain the ovarian vessels. This operation seems most applicable to cases of recent or acute prolapse. After childbirth these folds are relaxed and the ovaries are suspended by the utero-ovarian ligaments. The relaxation of the infundibulo-pelvic ligaments being exaggerated, the ovaries hang vertically downward, become congested and painfully prolapsed, whether the uterus is retroverted or anteverted. By this suture, which might be termed "taking a reef,"

the hilus of the ovaries are sewed to the relaxed infundibulo-pelvic ligaments near the brim, the virginal position of the ovaries was restored, the Fallopian tubes folded over them as before, and this was oöphorhaphy. When retroflexion of the uterus was present this condition was also cured by the operation. Anteversion and flexion were not rectified, though the symptoms were satisfactorily cured when dependent on prolapsed ovaries. Tait's operation for this condition consists in puckering up pieces of the broad ligament in a ligature, and so shortening the ligaments in all diameters. He raised the inflamed ovary to a higher level, but failed to give the desired relief. It is questionable whether this organ will remain permanently elevated, and it is not reasonable to believe that it will be cured if actually diseased. Few operators of the present day would stop before totally extirpating the organ, which will, of course, sooner or later, be the resource according to the experience or tendencies of the operator. The Weir Mitchell rest-cure is an indirect method of treatment which is sometimes of much benefit.

Hysterorhaphy affords more or less relief to patients whose ovaries are prolapsed, since the glands rise up in the pelvis as the uterus is elevated, and if deemed advisable the ovaries can be removed at the time of the operation. Pelvic massage is of benefit if the ovary is not too sensitive. It consists in making steady upward pressure on the gland with the index, or tip of the index and middle fingers, for one or two minutes, varied with occasional rubbing or kneading movements, while the other hand makes counter-pressure on the abdomen and down the uterus forward. This should be very carefully done, and discontinued if causing any undue pain or increase of tenderness.

Electricity in the form of galvanism, applied two or three times a week in séances of ten or fifteen minutes, strength 15–20 milliampères, is a valuable means of relieving the pain. The negative pole, with a large flat sponge or copper plate, is placed over the abdomen, and the ball electrode positive pole in the vagina.

Schultze's method of replacing the prolapsed ovary may be undertaken if all evidences of acute inflammation have ceased, and the presence of dangerous tubal disease has been excluded. This consists of etherizing the patient, placing her in the lithotomy position, and introducing the forefinger of one hand into the rectum, while the other hand grasps the fundus uteri above the fundus, and draws it forward. The rectal finger in contact with the imprisoned ovary seeks for an interspace between the gland and the surrounding adhesions, into which it is gradually bored until the latter become detached. The pressure is always made against the adhesions, not upon the ovary itself. The patient must be carefully guarded against subsequent peritonitis. Tampons or pessaries should be introduced to elevate and retain the ovary after it has been freed. This method is also applicable to cases in which the uterus is retroflexed and adherent. The ultimate results of this treatment are not well enough known as yet to allow its hearty recommendation.

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Clinical Department.

REPORT OF A CASE OF PUERPERAL PERITONITIS WITH PECULIAR HEART MANIFESTATIONS.

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MRS. T——, aged twenty-seven, was taken in her second confinement about two o'clock Thursday afternoon, December 28, 1888. I was called in about twelve o'clock of the same night. I made an examination and found the os dilated about two inches, with the parts rigid and with an inclined presentation of vertex to the right, with the left parietal protuberance presenting. I attempted version of the vertex by bimanual pressure between the pains, with the patient in the knee-chest position, and after the third attempt a complete vertex presentation was secured. From this time on her labor was normal but hard, and about eleven o'clock on the following morning an eleven-pound child was born. I worked about half an hour, using Credé's method for expulsion of the placenta, but as it seemed to be, and was, adherent, I anointed my hand and arm with a three per cent. carbolized ointment, and introducing my hand carefully into the uterus, succeeded in detaching and removing it. The external genitals were carefully washed with carbolic solution and the patient was left to rest.

I saw her again in the evening. The temperature and pulse were normal. On Saturday morning and evening I found pulse and temperature still normal, but as the patient expressed it, "I feel, oh! so tired." About eleven o'clock of the same night I was summoned in great haste, as the patient had had a chill. I found her suffering intense pain in the right hypogastrium. I diagnosed local peritonitis, fast becoming general. The temperature was 105°, pulse 120. I gave hypodermic of morphine ¼ grain, atropia $\frac{1}{100}$, and repeated the dose in an hour. Tympanites developing rapidly, hot applications were ordered, with turpentine stupes to the abdomen. I gave as an antipyretic 4-grain capsules of antifebrin and 5-grain capsules of quinia, alternately, every two hours. As depression was marked, I ordered two teaspoonfuls of alcohol as a sling, with four ounces of milk, every two hours. The patient continuing to grow worse, Dr. Campbell, of Ovid, was called in counsel, Wednesday, January 6th. He examined the patient carefully and detected a mitral murmur, and ordered digitalis and strychnine.

The patient continued about the same, the temperature ranging from 102° to 105°, and the pulse from 90 to 130, until on the morning of the ninth day of her sickness, when she called her husband to her bedside, and said that her heart had "flopped over," and that he must go for the doctor.

Upon my arrival I found the pulse 150 per minute, and it kept gradually increasing, hour by hour, until, at eleven o'clock at night, it was about 200 per minute. From this time until about two o'clock on Monday morning I could detect no pulse at the wrist at all. At this time the pulse began to be perceptible, and it gradually slowed down, and at four o'clock in the morning it stood 165—at six o'clock, 150—at ten o'clock, 140—and at twelve o'clock, as I sat down by the bedside, it was running at 135 per minute. While I was talking with her husband the patient said: "My heart has just snapped now, and don't run that way." I immediately put my finger on the pulse, and it was running 78 per minute, and strong. I do not think her pulse after that (except at one time, when it ran quite rapidly for an hour) was over 94 or 96 per minute. After this attack of heart trouble her abdomen, which had been very tympanitic, was greatly reduced by the continual expulsion of flatus.

From this time on her symptoms gradually amended until, about the twentieth day, a pelvic cellulitis on the

left side lighted up, ran its course, developing into a pelvic abscess which discharged per vaginam. I used large vaginal injections of between one and two gallons of water, as warm as the patient could tolerate it, every six hours, during her sickness, gradually lessening the number until only two a day were used, and these were continued until all pelvic tenderness had passed away.

I also used a succession of flying blisters across the hypogastrium, and ordered a ferruginous tonic. I am happy to say that my patient is now alive, and, as she expressed it a few days since, "I feel as well, if not better, than I ever felt before."

I have given the symptoms somewhat in detail in the hope that they might throw a little more light on the case. I offer no explanation of the peculiarities of it. I would say, however, that the mitral murmur spoken of, I now fail to detect since the patient has regained her health.

SYPHILITIC STENOSIS OF THE LARYNX WITH TRACHEOTOMY.

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We recognize among the disorders attending syphilitic manifestations in the larynx the peculiar disposition to chronic inflammation, as represented by alteration of the voice to what might be called a characteristic hoarse quality.

Moreover, grave respiratory symptoms are by no means unlikely to be intercurrent in the course of the so-called tertiary period of invasion; first, of a neurotic character, either peripheral or, more commonly, of a central origin, or as a result of local obstruction in the larynx itself from gummatous formation, by which the glottis is mechanically narrowed to a greater or lesser extent.

This latter condition must naturally occasion great anxiety to the attending physician, inasmuch as with him rests the responsibility of determining the term of impending suffocation before resorting to operative interference, which, while ordinarily of no intrinsic danger, is nevertheless regarded as an alternative to be justly avoided so long as constitutional measures give any promise of inducing resolution of the new formation.

It will be found, however, in a certain number of cases, that owing to a personal idiosyncrasy, antisyphilitic treatment fails to check the disposition to extension of the disease, or else, when carried to a point of forced tolerance, it is liable to induce such laryngeal irritation as to add still further to the danger arising from dyspnœa.

Under these circumstances there can be but little difference of opinion as to the advisability of an early tracheotomy, with the view of avoiding the possible risk attending respiration from too prolonged a delay; but more particularly to permit a treatment at once energetic and leading to a speedier dissipation of the infiltrating gummatous tubercle before the production of an organized and permanent tissue.

The following case serves to illustrate in a measure the conditions referred to, and, in its results, a more speedy recovery to a normal state than would have been looked for under other forms of active treatment.

Mrs. A. B——, aged thirty-five, married, was admitted to the Metropolitan Throat Hospital, October 3, 1888, suffering from intense dyspnœa with aphonia, and general symptoms of laryngeal obstruction. She gave a distinct history of syphilis extending over a period of four years, although decidedly difficult breathing had been observed only within the past three months, exhibiting a disposition to steadily increasing obstruction. Dr. Clark, of Newark, N. J., by whose advice she was brought to the hospital, stated that in the course of his treatment any determinate resort to the iodide of potassium at once caused such sudden and alarming symptoms from irritation and dyspnœa as to forbid its continued use.

On examination a large gummatous swelling was found involving the aryteno-epiglottic fold, the false bands, and extending so widely as to overhang completely more than half the glottic space.

Tracheotomy was performed the following day by Dr. Clinton Wagner. But little difficulty was found from hemorrhage in the course of the operation, although, owing to an unusually enlarged thyroid, the opening into the trachea had to be made at a lower point than ordinary.

The patient made a quick rally from the operation, and all danger from suffocation now being removed, the constitutional treatment was rigorously pushed, the iodide of potassium being given in full doses, increasing until four hundred grains per diem were taken.

The improvement was so satisfactory that the tube was permanently removed at the end of the third week, and before the patient was finally discharged—two months from the time of the operation—the tissues had so far returned to their normal condition that nothing more than a slight irregularity in the place of the former infiltration remained. The voice was good and strong, and the respiration perfect.

The iodide is still continued, in such moderate quantity as can be well borne, to preserve a constitutional effect, although there has been no disposition to a return of any of the former symptoms of the disease.

249 Madison Avenue.

OLIVE-OIL AND GALL-STONES.

Dr. John Trumbull, of Valparaiso, Chili, writes: "What, may I ask, are the facts with regard to the efficacy of large doses of sweet-oil in cases of gall-stones? Having been called to a case of repeated attacks of hepatic colic, where the diagnosis had been one of 'sand' from the gall-bladder, and the treatment simply subcutaneous injections of morphia for the relief of pain, with instructions as to diet, I referred the trouble to gall-stones, and advised the trial of large doses of olive-oil. At the second dose eight good-sized stones, as I fancied, were passed. Certain it is, that relief from the distressing attacks of colic has been attained; but I was chagrined to find that the stones(?) gradually vanished by absorption into the card-board box in which they were kept. The remains of what looked at first like gall-stones I boiled in alcohol, to find if cholesterin crystals would be deposited on cooling. The only product was a greasy film which deposited on evaporation of the alcohol. As a check on the result of the treatment, I myself took about eight ounces of sweet-oil, and in the evacuations found a large number of much smaller greenish-yellow masses, which likewise contained no cholesterin and went through a similar process of dissolution. Are not the truly remarkable results occasionally published due, therefore, in reality to the formation of fatty masses, closely resembling gall-stones, which are produced in the intestinal tract from the oil taken?"

Some Centenarians.—The Lafarge Tontine, which was formed in 1791, affords a curious illustration of the truth of the saying that annuitants live long. The last subscriber has only just died. Originally there were 116,000 subscribers, and the amount thus obtained was 59,000,000 francs. The dividends of those who died were to increase those of the survivors up to 3,000 francs per share, a limit extended in 1809 to 6,000 francs. The surplus was to go to the state, one object of the tontine being to reduce the national debt. In 1886 there were 17 survivors, holding 162 shares. Twenty of the shareholders were centenarians, and one reached the age of 106. Among the deaths registered in England and Wales in 1887 were 60 of reputed centenarians—13 men and 47 women. In the three preceding years the numbers had been 58, 63, and 71, respectively. Thirty-two are said to have reached 100 years, ten 101, and two 106 years, and two women are said to have been 107 and 109, respectively.—*British Medical Journal.*

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MARRIAGE AND INSANITY.

As public intelligence increases and the important part played by heredity in determining human character and happiness becomes more widely recognized, medical opinion upon the subject of marriage will more often be consulted. Already the questions of marriage and phthisis and of marriage and syphilis have been thoroughly discussed, and a considerable uniformity of opinion has been established. With regard to insanity, there is still diversity of view, and probably much greater actual ignorance, among medical men. A discussion of this subject by Dr. Henry R. Stedman (*Journal of Nervous and Mental Diseases*, January, 1889) is therefore timely.

It is impossible to formulate as yet any definite rules regarding this subject. Alienists at present differ extremely in their views as to the importance of the hereditary element in insanity, perhaps because this element varies enormously with different types of the disease; while it has almost nothing to do with general paresis or puerperal insanity, for example, it has a most dominant influence in epileptic, hysterical, paranoiac, and other forms which are the expressions of a continuous neurotic condition.

When a parent has suffered from puerperal, traumatic, syphilitic, or any form of insanity due to accidental or extrinsic causes, the child, if born before the insanity, can, as a rule, safely marry. Alienists are agreed also that the children of general paretics born before the onset of the disease are safe.

It is claimed, with more confidence, perhaps, than facts justify, that the mother oftener transmits insanity than the father. Hence insanity on the maternal side carries with it greater danger to the offspring.

Richarz gives the following order of liability to insane inheritance:

Mother	insane,	1,	the	daughter	resembling	mother.
"	"	2,	"	son	"	"
"	"	3,	"	daughter	"	father.
"	"	4,	"	son	"	"
Father	"	5,	"	"	"	"
"	"	6,	"	daughter	"	"
"	"	7,	"	"	"	mother.
"	"	8,	"	son	"	"

Slight mental taints in the parents are more dangerous if there is an element of consanguinity.

The personal history and physical characteristics of the patient himself must be especially studied. If these reveal anomalies of mind and physical stigmata such as indicate the insane diathesis, marriage becomes a risky experiment. At the same time it often happens that a person having a slight mental taint, if married to a robust, healthy, nerveless partner, may have healthy and even talented children.

The question of marriage becomes additionally difficult when the party desiring it has been insane and recovered. The conscientious physician will rarely find cases in which he is justified in sanctioning marriages. If there has, however, been but one attack, short in duration, due to accidental causes, and from which the patient has entirely recovered, marriage with a healthy person would be comparatively safe.

Dr. Stedman insists wisely upon the serious results that follow when marriage takes place while recovery is incomplete. The children in such cases are almost sure to be idiotic, imbecile, or the victims of some serious nerve-trouble.

PULSATING PLEURISY.

IN the *Archives générales de Médecine* for November and December, 1883, Dr. J. Comby described a peculiar form of pleurisy which he called "pulsatile." He reported several cases with autopsies, and collected observations by others. In the same journal for April, 1889, this author reviews the subject again, and completes its bibliography, except that, if we mistake not, he has overlooked some American contributors to this subject.

Pulsating pleurisy is a form of pleural inflammation in which, along with the effusion, there is a pulsation of the chest-wall synchronous with the heart-beat. It occurs, naturally, almost always upon the left side; and as the pleurisy is, with very rare exceptions, purulent, it might be properly called pulsatile empyema. The establishment of the fact of a pulsation is, therefore, a clinical fact which has some practical diagnostic importance. The pulsation is often feeble and likely to escape observation unless special care is taken in examining the patient. Its appearance at first suggests aneurism, but the other physical signs quickly exclude this possibility. Pulsatile pleurisy is chronic in its course and characterized by abundant effusion, with compression of the lung. Occasionally only is the effusion small in amount. It is then encysted, and forms special relations with the pericardium and its contents, by reason of which the heart's pulsations are transmitted to the chest-wall. In all cases, according to Comby, there is present at some time in the course of the disease a latent pneumothorax. There is no metallic tinkle, or amphoric souffle, but a tympanitic resonance and succussion-bruit that are easily detected.

The heart is generally healthy, but not rarely one finds some pericardial effusion.

The disease begins abruptly, as an acute pleurisy, and the pulsatile character does not appear until later. The course is very chronic, and some cases have been reported as lasting three and even seven years. The prognosis is, however, bad; most of the patients have died.

"Pulsation" in a pleurisy, as may be seen, is a physical sign that gives important information both as to diagnosis and prognosis. The theory of its production is still a matter of speculation. It is not due to the association of pericardial effusion with pleurisy, as Traube thought. Comby found, in three autopsies, that the lung was

flattened, and attached closely by inflammatory adhesions to the pericardium. There is thus a continuous mass of fluid from the pericardium to the thoracic wall, through which vibrations might easily pass. Besides this, the intercostal muscles are stretched and their functions arrested.

These factors seem to us to explain in a great measure the mechanics of the pulsation.

The treatment of pulsatile pleurisy presents nothing different from that of ordinary chronic empyema. The frequent presence of a pneumothorax has, however, to be borne in mind in the operation of evacuating the fluid.

THE AMERICAN POSTURE.

THESE are the days when even the most ordinary and apparently inconsequential items in human conduct or social custom must be submitted to the prying gaze of science. Everything, from the kiss that first accentuates the dawn of love to the painful struggles of parturiency, has to have its analysis and physiological explanation. It seems somewhat strange therefore that, in this alert and eager search for cause and effect, no one has yet attempted to analyze and place on a solid scientific basis the practice of sitting with one leg crossed over the other. This is a custom which, we venture to assert, is distinctly American, and one that has been observed and transmitted with pious care by the average American male for the past two hundred years. Its prevalence may have become somewhat modified by the incursions, during late years, of foreigners with large waists and weak adductors; but the true American still preserves this detail of his birthright with a constancy and obtrusiveness born of a deep sense of its eternal and inherited fitness.

There are certain inferior races of men who also sit cross-legged. But their case is quite different. They abduct the thighs and cross the legs, assuming a more or less fœtal posture, and one evidently connected with a lower degree of ethnical evolution. The monkey sits somewhat in the same style. In the higher and tenser civilization, however, which has unfolded beneath the stars and stripes, and the ennobling influences of the spoils system in politics, there is nothing fœtal in the posture, but directly the reverse. The adductors of the thighs are brought into play, a nobler group of muscles and one whose superactivity must, we take it, mean a higher physical development of man.

The conditions of life in America made of Brother Jonathan a man with a short trunk, small waist, and long legs, anatomical proportions exactly suited to a comfortable sedentation with the thighs crossed. This type of man still prevails in New England, the South, and parts of the Middle States and the West. With these a posture in which the thighs cross is instinctive. The observations of physiologists and physicists would undoubtedly show that in this position the centre of gravity is thrown forward so that it corresponds more nearly with the tubera ischiorum, thus enabling the sitter to gain a firmer hold upon the seat. Besides this, the weight of the crossing leg doubles the pressure of the foot upon the floor, and this again helps to prevent slipping forward. Whether there is anything in the posture which arouses a particular sense of ease, comfort, and feeling of well-being and contentment, despite a frowning environment, we cannot say. For the American leg-crosser does sometimes carry his habits to extremes. It may require another century of evolution to inoculate those given to the habit with altruism, and teach them that a deeper and truer joy may flow from not wiping their shoes on passing strangers than comes even from the highly evolved muscular adjustments of sitting with superimposed knees.

OUR COLORED PLATE ILLUSTRATING MEASLES.

IN this issue we continue a series of artistic delineations of the commoner forms of eruptive fevers, which are taken from Dr. Morrow's admirably illustrated *Atlas of Cutaneous Diseases*. The first of these, which appeared last month, represented a case of scarlet fever with a well-marked and characteristic general rash, showing, as well as possible by this means, the papillary elevations at different points. The enlarged papillæ of the tongue, with the yellowish-gray coating of the organ, illustrated in a striking manner the typical strawberry appearance to which reference is so frequently made in the text-books. It is not our purpose in these representations to do more than give the actual clinical aspect of a patient, referring our readers to the treatises on the subject for detailed study. The present one illustrating common measles, needs but to be referred to to be appreciated. At stated intervals will follow illustrations of German measles and small-pox. Aside from their clinical accuracy, these plates will be valued for their artistic excellence, as their equals in the latter respect have never been possible before in the heavy presswork of thousands of issues.

EXPLORATION OF THE BRAIN BY CAPILLARY HOLES.

DR. EDMOND SOUCHON, of New Orleans, in an article in the *New Orleans Medical and Surgical Journal*, describes an ingenious method of exploring the brain without trephining the skull. His procedure is as follows: A small incision is made in the scalp as far as the bone. Through this incision the bit of a watchmaker's drill was introduced, and as soon as it had reached the bone the instrument was held firmly pressed against the bone, and the sliding knot of the instrument worked, at first slowly, then swiftly, and again slowly as the bit penetrated the bone and came near the brain-substance. The bit is provided with a movable gauge and screw, which is adjusted so as to prevent the bit from penetrating too deeply into the brain-tissue.

As soon as the skull has been penetrated the drill is withdrawn and a hypodermic needle with syringe introduced. The needle should be twice as large as the ordinary needle of our cases, so that, if it should strike the thick pus of an abscess or the thick fluid of a cyst, the calibre will be large enough to suck it—which it will surely not do if the needle is as fine as the one ordinarily used for a hypodermic injection.

Two dogs were experimented upon, and holes were bored in six places without producing any unfavorable symptoms. On subsequently killing the animals, no injury was found to have been done aside from the production of a very small superficial hemorrhage. This possibility of hemorrhage is one that will probably limit the usefulness of the operation.

THE TEETH AND THE GENERAL PRACTITIONER.

AFFECTIONS of the teeth are not so often considered in our columns but that the general practitioner may congratulate himself on the appearance, in this issue, of an instructive, though cursory, paper and discussion on this subject before a recent meeting of the Practitioners' Society of New York. There is doubtless a strongly rooted reluctance on the part of the profession (and this was brought out in the discussion to some extent) to agree with the writer in respect to the importance he attaches to the dental reflex. But the candid observer can but feel that much careless dental work may be the outcome of referring dental neuroses due to caries of the teeth for treatment to persons unfamiliar, as most dentists are, with the important relations of the teeth with other organs. And where the physician is unable himself to offer any suggestions to the dentist in this regard, the patient is liable to be made worse rather than better, especially from the practice of saving so-called dead teeth. We trust the interest excited by thus bringing this subject before the profession may continue until the surgical importance of diseases of the teeth is recognized by medical men. Every surgeon now fully recognizes the importance of drainage and antisepsis in the treatment of necrotic processes, especially of the osseous tissues; and unless better means than now generally prevail—since the above well-known surgical principles are ignored in treating "dead" teeth so as to retain them in the jaws—are adopted, more or less danger is imminent in every case where the attempt is made.

TAR-WATER.

THIS once famous remedy, first recommended by the Bishop of Cloyne over one hundred years ago, has in late years been but little employed. Some recent contributions to the subject, however, appear likely to bring it again into more general use.

Tar-water, made from wood-tar, contains about thirty grains of the drug to a quart. Chemically, the substances in solution are said to be pyroligneous acid, an empyreumatic oil, and creasote. The liquid has a pungent taste, a smoky odor, and acid reaction. Locally it is unirritating, and slightly astringent and stimulating. Dr. Joseph E. Allen has recently recommended its use (*Atlanta Medical and Surgical Journal*) in obstetrical and gynecological practice. It forms an excellent antiseptic injection in the puerperal state and in cases of leucorrhœa and vaginitis, as well as in pruritus vulvæ. Skene has recommended it, taken internally, in chronic cystitis, and it may also, according to Dr. White, be used as an injection into the bladder.

Bishop Berkeley said of tar-water: "Having tried it in a great variety of cases, I found it succeed beyond my hopes; in a tedious and painful ulceration of the bowels, in a consumptive cough (as appeared by expectorated pus), an ulcer of the lungs, in a pleurisy and peripneumony. I never knew anything so good for the stomach as tar-water, it cures indigestion and gives a good appetite. It is an excellent medicine in asthma. It imparts a kindly warmth and quick circulation to the juices without heating, and is therefore useful not only as a pectoral and balsamic, but also as a powerful and safe deobstruent in cachectic and hysteric cases. As it is both healing and diuretic, it is very good for the gravel. I believe it to be of very great use in a dropsy."

Dr. William Murrell has recently delivered a lecture upon the therapeutic value of tar, and has gone very thoroughly into the history of its uses. He refers to a pamphlet, written in 1823, by Sir Alexander Crichton, entitled "Practical Observations on the Treatment and Cure of Several Varieties of Pulmonary Consumption, and on the Effects of Vapor of Boiling Tar in the Disease;" also to an article by Sales-Girons, in 1860, on the treatment of phthisis by inhalation of pulverized liquids and fumigations of tar. Dr. Murrell has been using tar in the treatment of chronic bronchitis, and speaks of it in the highest terms. He at first used two-grain pills, but has latterly prescribed the syrupus picis liquidæ U. S. P., of which the dose is about a tablespoonful, given frequently. He says: "A mixture of two parts of sirup of tar and one part of sirup of Virginia prune is an ideal cough-mixture. It has a sweet, agreeable taste, and patients, as a rule, like it. When the cough is very irritable, and there is very little secretion, the addition of three minims of liquor morphinæ acetatis will be found most useful. I have used with some success aromatic oil of tar, which is apparently a solution of tar in old Jamaica rum. The results have been good, and the preparation is popular with patients. When a more decided expectorant action is required, I add a small dose of hydrochlorate of apomorphine, about one-tenth of a grain."

IMPROVED TREATMENT FOR TINEA TONSURANS.

ALTHOUGH in most cases this disfiguring disease yields readily to one or other of the many applications which are recommended for it, yet in some cases, as the physician knows to his grief, it proves extremely obstinate, and the wisest efforts serve only to suppress it for a time. Some years ago Dr. Harrison, of Bristol, attempted, in a paper before the British Medical Association, to lay down more clearly the principles upon which successful treatment must be based. He showed that two sets of agents were needed: the first, an agent to dissolve the hair and to expose the fungus in its lurking places in the cuticle, hair, and hair-follicles; the second, a parasiticide to destroy the fungus. For the first he recommended a solution composed of liquor potassæ, spirits of wine, and iodide of potassium; for the second a solution of mercuric chloride in spirits of wine and water. By this method, through the softening action of the alkali, the iodide of potassium was allowed to soak into the parts affected, and then the application of the mercuric solution formed the very excellent parasiticide, biniodide of potassium, in and about the tissues occupied by the fungus. In the *British Medical Journal*, March 2, 1889, he presents a simpler plan, in which the drugs are applied in the form of ointment. He finds that patients will carefully rub in an ointment, when they will not take the trouble to properly apply a solution. The ointment which he uses is made a follows: Caustic potash, gr. ix.; carbolic acid, gr. xxiv.; lanolin and oil of cocoa-nut, of each, ʒ ss. The ingredients must be well rubbed together, and a little oil of cloves, lavender, or rosemary may, if desired, be added. A small portion of the ointment is to be rubbed on the affected part, night and morning. The alkali softens the hair, and allows the carbolic acid (it

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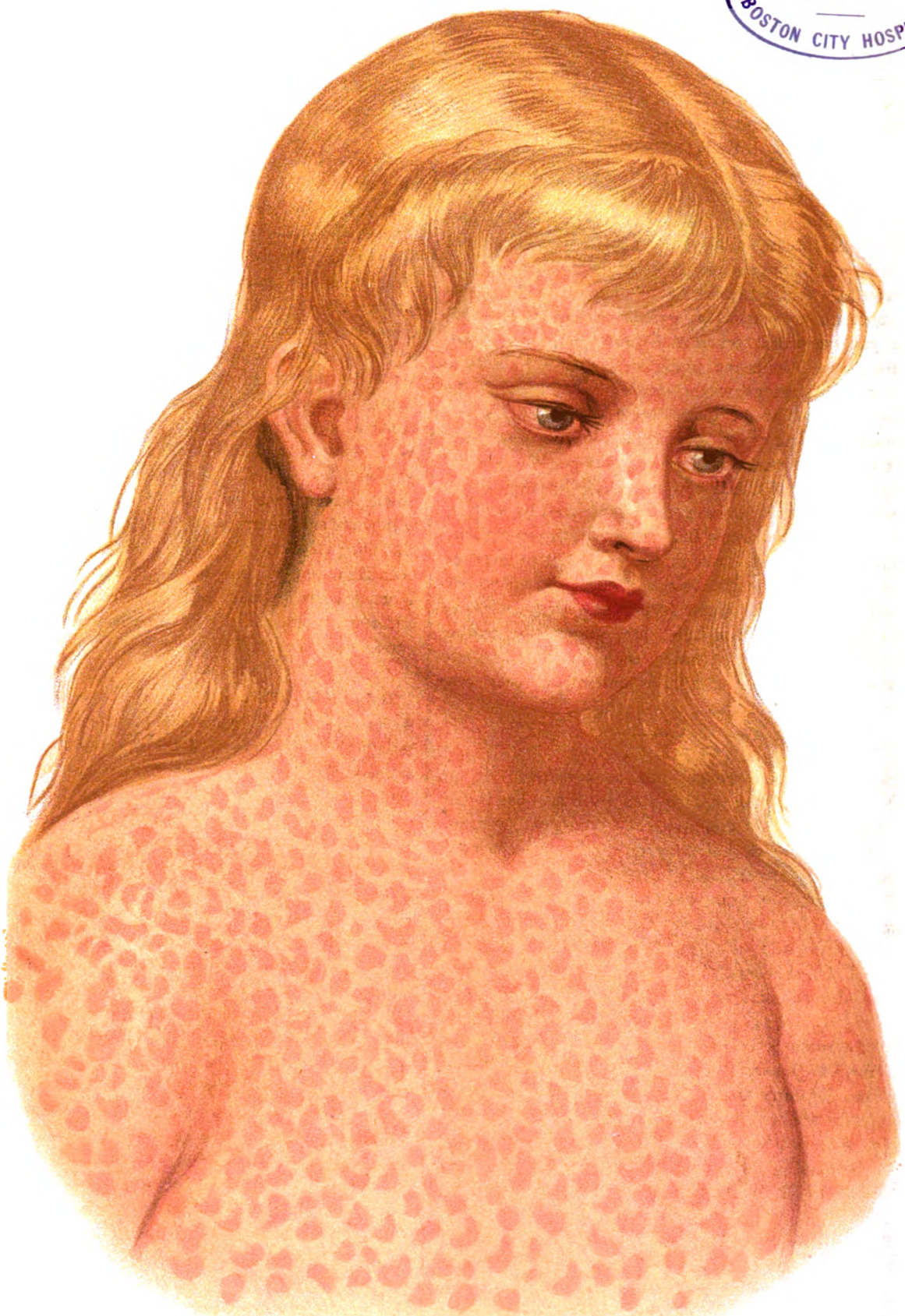

RUBEOLA – MEASLES.

From Dr. P. A. Morrow's Atlas of Venereal and Skin Diseases

WILLIAM WOOD & COMPANY, Publishers, NEW YORK

LINDNER, EDDY & CLAUSS, LITH. N. Y.

should be remembered that carbolic acid is not an acid, and does not combine with alkalies) to reach and destroy the fungus. He thinks it is better not to shave the part, but to leave the hair at least a fourth of an inch long, as the ointment is then kept upon the part.

To prevent infection from ringworm of the scalp, he employs an ointment of the following composition: Ointment of boracic acid, and ointment of eucalyptus, of each ʒ ij.; oil of cloves, 3 ss.; oil of cocoa-nut, enough to make ʒ vj. This, he says, constitutes a very elegant pomade even for general use, and is also an excellent prophylactic pomade. When ringworm makes its appearance in a family, he recommends that this prophylactic pomade be applied daily, not only to the healthy parts of the patient's scalp, but also to the heads of the other children in the family. To test its protective powers he has in three cases placed infected hairs on the heads of healthy children, and then first applied the pomade on the next day. None of the children caught the disease. The great confidence which he feels in the efficiency of the methods described above is founded upon the observation and treatment of more than one hundred cases of tinea tonsurans.

News of the Week.

An International Congress of Medical Jurisprudence will be held in this city, June 4, 5, 6, and 7, 1889.

State Medical Society of Wisconsin.—The next meeting of the Society will be held in Milwaukee, commencing Tuesday, June 4th.

Pennsylvania State Medical Society.—The Thirty-seventh annual session of the Pennsylvania State Medical Society will be held in Pittsburg, June 4th to 7th.

The Emanuel Sisterhood of Personal Service, of New York, has been incorporated. Its object is to direct and aid its members who desire to devote a portion of their time to visiting the sick and caring for young children.

The Missouri Pacific Railway Hospital at Independence will soon be removed to Kansas City. Temporary quarters have been secured at the corner of Sixteenth and Penn Streets; but it is the intention of the road, as soon as a suitable site can be secured, to erect a $40,000 building for the hospital.

Dr. Henry E. Allison, first assistant at Willard Asylum since 1878, was appointed Medical Superintendent of the New York State Asylum for Insane Criminals at Auburn, by Superintendent of Prisons Lathrop, to-day. Dr. Allison succeeds Dr. Carlos F. Macdonald, who has been appointed on the new State Lunacy Commission.

Indiana Physicians.—At a recent meeting of the Indiana State Medical Society, Dr. J. F. Hibbard, of Richmond, stated that there are 4,163 registered physicians in that State. Of these, 3,243 are regular physicians, of whom about 1,300 are members of the State Medical Society; 287 are classed as eclectic; 199 as homœopathists; 142, physio-medical; and 192 are unclassified.

A New Medical College has been organized at Knoxville, Tenn.

The Fourth Annual Dinner of the New York Postgraduate Medical School was held at the Hotel Brunswick on Thursday, May 23, 1889. Dr. D. B. St. John Roosa, President of the Faculty, occupied the head of the table and introduced the speakers in his characteristically felicitous manner. The toasts were responded to as follows: "The Faculty," by Professor Charles Carroll Lee, M.D.; "The State of New York," by Hon. William H. Robertson; "The Clergy," by Rev. David H. Greer, D.D.; "The Profession in New York," by Professor T. Gaillard Thomas, M.D.; "Our Directors," by Professor Andrew H. Smith, M.D. Dr. C. C. Rice, the Secretary of the Faculty, spoke of the prosperity of the school, the large class that had been in attendance last year, and stated that the school now owned its building, a fact which was received with becoming enthusiasm. Among the other features of the evening was an admirably apt poem by Professor Charles L. Dana, and remarks by Judge Haws and Mr. Russell Harrison.

The Johns Hopkins Hospital.—The following is the staff of the hospital: Physician-in-chief—Dr. William Osler; Pathologist—Dr. W. H. Welch; Chief of Dispensary—Dr. W. S. Halsted; Resident House Physician—Dr. H. A. Lafleur; Resident House Surgeon—Dr. F. J. Brockway; Assistant House Physician—Dr. Harry Taulmin; Assistant House Surgeon—Dr. G. E. Clarke; Consulting Physicians and Surgeons—Dr. Alan P. Smith, on the part of the hospital trustees, and Dr. James Carey Thomas, on the part of the university trustees, and Drs. Isaac E. Atkinson, S. C. Chew, Frank Donaldson, W. T. Howard, C. Johnston, T. S. Latimer, F. T. Miles, G. W. Miltenberger, L. McLane Tiffany, and H. P. C. Wilson. Staff of Dispensary—Chief of Surgeons, Dr. W. S. Halsted, with the assistance in general surgery of Drs. James Brown and J. M. T. Finney, and the resident house surgeon, with Dr. S. Theobald in charge of the department of diseases of the eye and ear, and Dr. R. B. Morison in charge of the department of diseases of the skin. Chief physician, Dr. W. Osler, with the assistance of Dr. William D. Booker, in the treatment of diseases of children, and Dr. H. M. Thomas in the treatment of nervous diseases, and the resident house physicians, with Dr. J. N. Mackenzie of the department of the diseases of the throat.

A Memorial Hospital for Railroad Men.—The memory of Thomas J. Potter, one of Iowa's most noted railroad men, will be perpetuated by a hospital for injured and sick railroad men, instead of by a bronze statue of heroic size, as was planned at the time of his death, about a year ago. Mr. Potter was Vice-President and General Manager of the Chicago, Burlington & Quincy road, and such a hospital as is contemplated was one of his favorite projects.

The New Cure for Constipation.—Dr. Clement Cleveland's interesting paper on stretching the sphincter as a cure for constipation, which recently appeared in The Medical Record, has commanded a great deal of attention at home and abroad, having been extensively quoted and abstracted. We should like to know what they will think of it in Turkey.

Society Reports.

THE AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in the New Army Medical Museum, Washington, May 14, 15, and 16, 1889.

(Continued from page 587.)

SECOND DAY, WEDNESDAY, MAY 15TH — AFTERNOON SESSION.

THE first paper, read by DR. THEO. A. MCGRAW, of Detroit, was entitled

A CONTRIBUTION TO THE HISTORY OF GUNSHOT WOUNDS OF THE ABDOMEN.

Reference was first made to a case of gunshot wound of the abdomen, operated on by Dr. R. Abbe, of New York, July 8, 1886, in which, four hours after the accident, adhesions of the intestine to the abdominal wall were found, forming a cavity containing extravasated fæces. The adhesions were broken up, and four holes in the bowel and one in the bladder were closed. Suppression of urine and death followed. In August, 1887, the author was called to a case of gunshot wound of the abdomen, fourteen hours after its occurrence. At the operation it was found that adhesions had formed, shutting off the peritoneal cavity. These were broken up and eight perforations of the bowel found. Five of these had become so occluded by lymph as to be detected with difficulty and no discharge could be forced through them. Four feet of the ileum was excised. The patient died twenty-six hours after the operation. A study of these cases led the reader to suggest that under such circumstances the drainage of the cavity would be the best plan to adopt. The artificial anus or fecal fistula could then be operated on at a later period. The question arises whether or not these cases of early agglutination are sufficiently numerous to warrant our making them the point on which the treatment of all cases of penetrating wounds of the abdomen over six hours old must turn This question cannot be decided at present.

A review of the approved methods of treating gunshot wounds of the abdomen was then taken up. The great danger has been shock. The shock has depended, first, upon the time occupied in operating; second, upon the amount of evisceration; third, upon the number and the nature of the injuries to be repaired; fourth, upon the chilling of the intestines, and fifth, possibly upon the long continued anæsthesia. In discussing the subject the following propositions were considered—many of them based upon experiments upon dogs and sheep.

1. The gravity of an injury of this kind depends partly upon the size of the missile.

2. Gunshots which enter the abdominal cavity pass in a nearly absolutely straight line from the orifice of entrance, through the peritoneum to that of exit or to their final stopping-place in the viscera. All apparent deviation of bullets fired into the abdomen from a direct path are due to changes in position subsequent to the shooting.

3. An incision made directly in the course of the ball will give the shortest route to the injured viscera.

4. The contents of the bowels may be made to discharge through an open gunshot wound by manipulation and pressure.

5. An empty condition of the alimentary canal is most favorable to healing. To secure this it may be proper, in some cases of injury of the bowel, immediately after a hearty meal to evacuate the contents of the stomach by means of a siphon.

6. Agglutination and limitation of the morbid processes consequent upon gunshot wounds may take place as early as the sixth day.

7. Senn's method of hydrogen gas insufflation, however admirable in recent cases, should be used with great caution in cases four hours old, and especially in those made by small bullets.

8. The dangers of the operations for penetrating gunshot wounds of the abdomen are directly in proportion to the length of the operation and to the amount of the evisceration. The duration of the operation may be lessened: 1st, by making the incision over the line taken by the ball, or, if it has passed from before backward, over the point of entrance; 2d, by limiting the examination of the viscera strictly to such of them as may have been in the course of the ball; 3d, by suturing wounds of the intestine, whenever it is possible, instead of excising them; 4th, by omitting all operative procedures, even suture in wounds which have become so thoroughly occluded by plastic material that the contents of the bowel cannot be pressed through them; 5th, by operating first on those wounds which imperatively demand it, and leaving to the last those which may recover without operation; 6th, by never eviscerating a patient, except, first, when hemorrhage is otherwise uncontrollable, and second, when there is evidently a discharging wound which cannot otherwise be found. The evisceration of a patient is as dangerous as any gunshot wound of the intestine which cannot be made to discharge its contents by manipulation or pressure can possibly be. There are cases when evisceration is necessary, but the author protested earnestly against the habit of eviscerating patients suffering from gunshot wounds of the abdomen as a matter of routine. We are not warranted in turning a man inside out and subjecting him to frightful dangers in the mere fear that there may be still an undiscovered wound, when all the symptoms which ought to indicate such a wound are absent.

9. In cases of these wounds in which patients may be too weak to endure any radical operation for their repair, efforts for their relief may be made by incision and drainage, and in some cases by attaching the injured intestines to the abdominal wall as in gangrenous hernia. This procedure occupying but little time, and making no draft upon the strength of the patient, may offer a hope of recovery which would not be possible under the expectant mode of treatment.

DISCUSSION.

DR. D. W. YANDELL, of Louisville: The statement in regard to the course of balls is new to me. A number of cases which I have seen had led me to believe that balls entering the abdomen might deviate very greatly. I am not altogether prepared to accept the statement at present. In one case in which the pistol was held near the individual, and in a straight line, the ball entered above the symphisis pubis and was found below the spleen, having wounded intestines in its course.

The recommendation that, in the extreme cases where the patient is greatly exhausted, the wounded intestine be secured at the abdominal incision, is certainly conservative, and it would seem to me to be wise.

DR. C. B. NANCREDE, of Philadelphia: There are such a number of cases on record in which it was supposed that the balls were reflected, that I think that there can be no doubt that this occurs occasionally.

In regard to the incision: From my experience with both the median and the lateral incision, I am forced to the conclusion that, unless we are certain that the ball has followed an antero-posterior course, the median incision is to be adopted in every case, with rare exceptions.

I suppose that Dr. McGraw means by evisceration removal of the intestines *en masse*. It makes a great difference, as far as shock is concerned, whether the intestines are removed all together, or simply an inch brought out of the opening, immediately replaced, and another portion examined, at no time exposing a large portion of the bowel. So many cases have been recorded in which death was the direct result of overlooking a single wound of the viscera or blood-vessels, that the only safe rule is to make a thorough examination before closing the abdominal incision.

DR. J. EWING MEARS, of Philadelphia: The median incision is, I think, the one which should be adopted. It

can be extended any desired distance, which cannot be done with the lateral incision. By the median incision the entire abdominal cavity can be inspected.

In regard to what has been termed evisceration, I think that it is better to permit the patient to die without operation, than that an incomplete or imperfect operation should be performed. I think that the surgeon would be almost criminally culpable if, after subjecting the patient to the dangers of an abdominal section, he closed the abdomen without satisfying himself by thorough examination that he has found every wound that could have been inflicted. It is not necessary to turn all the intestines out. It is sufficient to slip them through the hands, subjecting them to careful inspection.

Dr. R. A. Kinloch, of Charleston: After the abdomen is opened in a search for wounds, I think that every wound should be closed. We cannot say that one wound is of less importance than another.

Dr. W. W. Keen, of Philadelphia: As regards the line of incision, we should make a distinction between stab-wounds and gunshot wounds. In the former case I think the incision should be made at the point of wound, while in the latter the almost invariable rule should be the median incision. I can but agree with previous speakers that, after we have opened the abdomen, no case is properly treated if we leave by any possibility a single wound. Every wound should be sutured.

Dr. C. H. Masten, of Mobile: In regard to the course of balls, I treated one case in which the ball entered one inch to the right of the umbilicus, made nine openings in the intestine, passed down through the bladder, out through the prostate, and lodged near the tuber ischii on the left side. The spinal column had not been injured.

Dr. F. S. Dennis, of New York: I believe that it is a rule without exception that the median incision should be made where we are going to sew perforations in the bowel, or stop hemorrhage in the abdominal cavity. The point of first importance is the control of hemorrhage. The median incision will permit the surgeon to enter the peritoneal cavity in half a minute.

Dr. Stephen H. Weeks, of Portland, Me.: I have not heard allusion in regard to the use of Dr. Senn's method. He laid stress upon two points, first, the use of gas in determining whether perforation had occurred, and second, in locating the openings in the bowel. It seems to me that this latter is a valuable point.

Dr. Stephen H. Weeks read a paper entitled

DRAINAGE AND DRAINAGE-TUBES IN THEIR APPLICATION TO THE TREATMENT OF WOUNDS.

The paper first referred to the great importance of drainage, and after alluding to the various methods proposed for securing it, described a new form of absorbable drainage-tube prepared from the arteries of animals. The arteries used are those of the ox. They are separated from their sheaths and cut into tubes four or five inches long. They are then boiled in water for about five minutes. This sterilizes them and hardens their coats. Holes are next cut in their sides, and they are passed over glass rods of different sizes according to the size of tube desired. They are now placed in corrosive sublimate solution, one to one hundred, and allowed to remain ten minutes. Then they are placed in alcohol, ninety-five per cent., and at the end of twenty-four or forty-eight hours the glass rods are removed, the tubes being kept in alcohol until needed. These tubes are unirritating to the tissues; they are absorbed in from five to seven days and drain the wound perfectly.

Adjourned.

Third Day, Thursday, May 16th—Morning Session.

Dr. John Homans, of Boston, read a paper on

A SUCCESSFUL CASE OF NEPHRECTOMY FOR THE REMOVAL OF CANCER OF THE RIGHT KIDNEY.

The patient, a woman aged fifty, for a year had suffered with frequency of micturition. The urine had been dark and bloody at times. For three years she had suffered from indigestion. The tumor had been discovered in 1887, in the right iliac region, and since July, 1888, it had grown rapidly. It filled the right iliac region, and more or less the umbilical and pubic regions. On palpation, large irregular nodules were felt, and in some parts there was fluctuation. Laparotomy was performed January 21, 1889. The incision was made in the linea alba, and was four inches in length. The tumor was exposed, and in the upper part was seen the remaining portion of the kidney and two large renal veins. These were tied with silk, and the ureter was next tied and divided, and then the pedicle was readily ligated. The tumor was removed, a glass drainage-tube introduced, and the wound closed and dressed with iodoform gauze and absorbent cotton. The tumor measured six by nine inches, and weighed fifty-three ounces. There was very little shock. The amount of urine since the operation has varied between ten and fifty-seven ounces, and has been gradually increasing. There was but little discharge from the drainage-tube, which was removed on the fourth day. One month after the operation an abscess was opened in the right lumbar region. A slight swelling and some tenderness still remain in the right loin. Whether these are wholly inflammatory or due to a recurrence of the growth, cannot at present be determined. The patient is rapidly gaining strength.

The experience of the author led him to say that a large renal tumor which cannot be diminished in size by tapping (he would consider one weighing a pound or more a large tumor), can most conveniently be removed by an incision through the linea semilunaris or in the linea alba. Small tumors and those that can be diminished, may be removed by the lumbar incision. In cases of moderate-sized kidneys, disorganized with pus, or tubercular, or containing calculi, the lumbar incision is preferable.

Dr. Frederick E. Lange, of New York: In cases where a large tumor of the kidney is to be removed, and where it is desirable not to open the peritoneal cavity, I have found a trap-door incision with exsection of one or two ribs, if necessary, give ample room for operation. I have operated nine times, but never for neoplasm. With free incision and open antiseptic after-treatment, I regard extirpation of the kidney, even in cases of large tumors, a comparatively safe operation.

Dr. M. H. Richardson, of Boston: There is a frequent anomaly of the vascular supply of the kidney which should be borne in mind in operations. Instead of one renal artery, there may be three or even four arteries. If such a pedicle is ligated en masse there is danger of slipping of the ligature and hemorrhage. This is obviated by tying the pedicle in several sections.

Dr. Lewis S. Pilcher, of Brooklyn, read a paper on

THE QUESTION OF THE ANTITUBERCULAR POWER OF IODOFORM, WITH A SUGGESTION FOR A MORE EXACT CLINICAL TESTING OF THE SAME.

The paper first called attention to the different results obtained by the application of iodoform to tubercular tissues, according as the results were derived from clinical experience or from observation on tubercular affections artificially induced in animals. The following case was a contribution to the study of this question.

A girl, thirteen years of age, with a family history of tuberculosis, came under observation with an infiltrated and ulcerated patch on each leg. There was also on each thigh an infiltrated patch without ulceration. The disease was of three months' standing. The diagnosis of tuberculosis of skin was made. The patch on the right leg was excised, and microscopical examination confirmed the diagnosis; tuberculous nodules with bacilli were found. The patches on the thighs were also excised, and healed without further treatment. Bismuth was applied to the patch on the right leg, and healing progressed satisfactorily. It was then determined to apply skin-grafts. The sore was curetted, the grafts applied, and did well for a time.

Later the epithelial elements broke down and a number of small ulcers formed. At the base of each ulcer was found a particle of bismuth. Portions of the tissue removed, however, showed no bacilli. No iodoform had been employed. Boracic acid ointment and the occasional application of nitrate of silver were now ordered. The ulcer on the left leg was curetted on December 10, 1888, sprinkled with iodoform, and covered with absorbent cotton. It rapidly healed, and on January 25th a wedge-shaped piece was removed and examined. It was entirely free from evidences of tuberculosis. A soft, natural skin has since formed.

Dr. William H. Pancoast, of Philadelphia, made some brief remarks on the following topics:

I. That the so-called metacarpal bone of the thumb did not belong to the metacarpal group; that its method of development clearly placed it in the class with the phalanges.

II. He next exhibited and described his urethrotome, which he had used with satisfaction for twenty years.

III. A delicate knife, which he termed the "therapeutic knife," employed for making numerous minute punctures in an inflamed part for securing an antiphlogistic effect.

IV. A gun-breech, which had remained for some time unsuspected in the superior maxillary bone of a boy.

V. The use of black silk bandages and black adhesive plaster, as adding greatly to the neatness of a dressing.

VI. The use of iron-dyed black silk ligatures.

VII. His method of treating varicocele, by passing a silk thread through the scrotum between the vas deferens and the veins, returning it through the same opening in the skin, but in front of the veins, passing the ends of the ligature through holes in a metal plate and tying tightly. The cure is complete in three or four days.

The Committee appointed to take action in regard to the death of Dr. S. W. Gross presented the following:

Whereas, It has pleased the Almighty to remove from our midst Dr. Samuel W. Gross, who assisted in founding the American Surgical Association, and contributed by his example and work largely to its success; who as a teacher was enlightened and impressive, as an author was accurate and original, as a surgeon was sound in judgment, rich in clinical experience, skilled in manipulation, and as a Fellow was genial and courteous. Therefore, be it

Resolved, That the Association deplores his death as an irreparable loss, and directs that a copy of the foregoing be spread upon its minutes and forwarded to his bereaved family.

(Signed)
D. W. Yandell, P. S. Conner, J. Ewing Mears.

OFFICERS FOR ENSUING YEAR.

President—Dr. D. W. Yandell, Louisville, Ky.; *Vice-Presidents*—Dr. Claudius H. Masten, Mobile; Dr. C. B. Nancrede, Philadelphia; *Secretary*—Dr. J. R. Weist, Richmond, Ind.; *Treasurer*—Dr. P. S. Conner, Cincinnati; *Recorder*—Dr. J. Ewing Mears, Philadelphia; *Council*—Drs. John S. Billings, L. McLane Tiffany, W. F. Peck, and F. S. Dennis; *Chairman of Committee of Arrangements*—Dr. J. S. Billings, Washington.

The following were elected members: Dr. Stephen H. Weeks, Portland, Me.; Dr. Robert F. Weir, New York; Dr. John Homans, Boston; Dr. Lewis A. Stimson, New York; Dr. Frederick E. Lange, New York; Dr. Lewis S. Pilcher, Brooklyn; Dr. Levi Cooper Lane, San Francisco; and Dr. Arthur T. Cabot, Boston.

The Association then adjourned, to meet in Washington the second Tuesday in May, 1890.

He Charges Five Dollars for Thrown Kisses.—One of the most fashionable of Philadelphia physicians always kisses his hand when waving farewell to his wealthiest lady patients; but some of them were comparing notes the other day, and found that for visits when he kissed his hand he charged ten dollars, while for others he charged only five.—*Philadelphia Times.*

THE NATIONAL ASSOCIATION OF RAILWAY SURGEONS.

Second Annual Meeting, held in St. Louis, Mo., May 2 and 3, 1889.

First Day, Thursday, May 2d—Morning Session.

The Association met at the Pickwick Theatre, and was called to order by the President, Dr. J. W. Jackson, of Kansas City, at 10.30 A.M.

The Rev. S. J. Nicolls, of the Congregational Church, of St. Louis, offered prayer.

Mayor Noonan, who was to have delivered the address of welcome, was unable to be present, and sent his regrets.

The address on behalf of the local profession was delivered by Dr. E. L. Gregory. He said the splendor of modern surgery comes to wipe away the shame of mutilation, once so humiliating in railroad injuries. The discovery of the causes of inflammation and the methods of prevention have revolutionized medical science. Amputation, once the rule, was now the exception. Life in a limb is now a guarantee of its preservation.

Dr. J. H. Murphy, of St. Paul, Minn., followed Dr. Gregory with some timely and appropriate remarks.

Dr. J. B. Murdock, of Pittsburg, Pa., contributed a paper entitled

TORSION OF ARTERIES FOR THE ARREST OF HEMORRHAGE,

in which he said, upon no subject has our profession been more conservative than upon the manner of arresting hemorrhage after wounds of the arteries and veins. Since the time of Celsus, notwithstanding the numerous methods which have been proposed for this purpose, but two, viz., the actual cautery and the ligature, have received the endorsement of the profession. But if the profession has been slow to endorse new methods, its confidence once gained has not been easily shaken. This could be illustrated by the tenacity with which surgeons adhered to the use of the actual cautery after the discovery of the ligature. The twisting of an artery to arrest bleeding is of ancient origin. It has been advocated by such surgeons as Amusset, Diffenbach, Schroeder, and Syme. But the credit of bringing it prominently before the profession and establishing its efficiency is due to Bryant, the present distinguished surgeon of Guy's Hospital, London. At this hospital the ligature is seldom used, torsion being chiefly relied upon. Mr. Bryant tells us, in the last edition of his "Surgery," that in 200 consecutive amputations of the thigh, leg, arm, and forearm, all of the arteries were twisted, 110 of them being the femoral artery, and that in no case was there secondary hemorrhage. At the Western Pennsylvania Hospital, of Pittsburg, torsion is almost exclusively relied upon to check the hemorrhage from wounded arteries or veins. Dr. Murdock's experience with torsion as a hæmostatic dates back to the year 1872, when he became a member of the hospital staff, and for the past fourteen years he has not had a case of secondary hemorrhage which could be fairly attributed to torsion. A table showing the number of arteries divided, in cases of amputation where torsion has been resorted to for the arrest of hemorrhage, at the Western Pennsylvania Hospital, is as follows:

Femoral	95	times.
Popliteal	14	"
Axillary	15	"
Anterior tibial	276	"
Posterior tibial	276	"
Brachial	62	"
Radial	40	"
Ulnar	40	"
Total	818	"

The advantages of torsion as compared with ligation are:

1. The greater facility with which it can be applied. He was fully aware that this proposition is disputed, but

to those who are familiar with both methods there can be no doubt that torsion is the easier of the two. For the ligation of an artery an assistant is required to seize the vessel and draw it out while the ligature is applied. For torsion the surgeon requires no assistant. The vessel must be seized by the forceps in either case. In torsion it only requires three or four turns of the forceps to complete the process, which can be accomplished in as many seconds.

2. Torsion is a safer method, being less liable to be followed by secondary hemorrhage.

3. Healing is facilitated, because the wound is free from any irritating or foreign body.

Dr. A. S. von Mansfield, of Ashland, Neb., understood the essayist to say that the animal ligature is not as safe as torsion. He would hold that the ligature does the same thing that torsion does in arresting hemorrhage. It destroys the intima of the vessel, and as a consequence coagulation takes place.

Dr. George A. Baxter, of Chattanooga, Tenn., desired to say that Dr. Battey, of Rome, Ga., had abandoned the animal ligature entirely, claiming its absorption is too quick, and its danger of unbinding too liable to make it serviceable in important operations. If this is true, he should say torsion is the more preferable of the two.

Dr. S. D. Robbins, of Vicksburg, Miss., asked whether torsion could be resorted to in an artery so important as the femoral, instead of ligation, with equally as good results.

Dr. Murdock replied, Yes; he had applied torsion in the case of the femoral artery ninety-five times with success.

Dr. Good, of Birmingham, Ala., would not abandon the ligature entirely for torsion, but would draw the line in certain cases.

Dr. P. French, of Mexico, Miss., had seen Bryant apply torsion, and in order that the members might have a correct understanding as to the number of twists or turns, he would say that Bryant recommends making turns until the surgeon feels a want of resistance in the vessels.

Dr. W. A. McCandles, of St. Louis, held that the pedicle of tumors and the catgut ligature became living tissue.

Dr. S. S. Thorn, of Toledo, O., arose and refuted the remarks of the preceding speaker. According to experimentation they were absorbed. We have evidences of this in operations where the ligature is used in closing surface wounds.

Dr. G. J. Northrop, of Marquette, Mich., desired the essayist, in closing the discussion, to state in what cases he would apply torsion, and what cases he would select for the ligature.

Dr. R. Harvey Reed, of Mansfield, O., said the question of what becomes of a ligature in ligating vessels had been pretty thoroughly demonstrated by experimentation. Dr. Senn, of Milwaukee, Wis., had demonstrated that it was absorbed in experimenting on animals. The silk ligature, however, becomes encysted in from twenty to thirty days after the animal is killed. He had himself demonstrated this by experimentation. In the use of the catgut suture in abdominal surgery, unless the closure of the wound is rapid, the catgut becomes absorbed. He had never known the silk ligature to become absorbed and fail to do its duty.

With all due deference to Dr. Murdock, he was a little afraid of torsion. He had experienced little or no difficulty with antiseptic silk sutures.

Dr. Nye, of Pennsylvania, asked whether Dr. Murdock had an opportunity of examining an artery several days after he had applied torsion to know its condition.

Dr. J. H. Murphy, of St. Paul, would hereafter try torsion, and after he did that he would apply a silk ligature as a means of further safety.

Dr. Murdock, in closing the discussion, said it matters not whether torsion or ligation be resorted to, the principle is the same. With regard to the twisting of arteries, he finds that it requires four or five, or possibly more, revolutions of the forceps to make the necessary resistance. The surgeon knows that when a ligature is applied to an artery, whether it be silk or catgut, it ruptures the internal and middle coats. It is the external coat that resists tension of the ligature. There is retraction and contraction of the inner and middle coats, and a clot is formed, and it is the final organization of this clot that arrests the hemorrhage.

His reasons in favor of torsion over the silk or catgut ligature are:

1. On account of the greater facility with which it can be applied.

2. If the surgeon uses catgut the knot will untwist; it becomes softened before the clot is organized, and in that case secondary hemorrhage is likely to occur.

3. With the experience of both in Guy's Hospital, London, and the Western Pennsylvania Hospital, it is safer.

Afternoon Session.

The Association reassembled at 2 P.M., with President Jackson in the chair.

Dr. E. R. Lewis, of Kansas City, read a volunteer paper on

THE HOT SPRINGS OF ARKANSAS,

which was referred to the Committee on Publication.

First Vice-President Murphy was called to the chair, and President Jackson delivered his address, taking for his text

THE RAILWAY HOSPITAL SYSTEM OF THE MISSISSIPPI VALLEY.

The address was practically a history of the railway hospital movement, which, according to the speaker's data, originated in the West. The first consideration he had given to the subject of the establishment of a railroad hospital service was in 1867, during his incumbency of the office of local surgeon of the Missouri Pacific, at Kansas City. But there his surroundings forbade making such an attempt, although he did make the effort in 1872, as chief surgeon of the Atlantic & Pacific Railway Company, in a territory extending from Pacific, Mo., to Vinita, Indian Territory, and from St. Louis to Atchison, Kan. His first equipment was crude, and the success of the plan limited, owing to the lack of proper facilities for competent instant attention to persons injured on railroads, as well as for want of subsequent attendance and nursing. It was in the summer of 1879 that Dr. Jackson persuaded Superintendent Talmage, of the Wabash, to make the attempt to establish a railroad hospital service on the assessment plan, which to-day had the almost universal indorsement of not only railway employees, but of the public at large.

A spirited discussion followed the President's address, the arguments being for and against the establishment of such union hospitals.

A copy of the address was ordered to be sent to every railroad manager throughout the country.

The following resolution, offered by Dr. John E. Owens, of Chicago, was adopted without debate:

"*Whereas*, During the past few years there have been organized, in different parts of the United States, several chartered corporations styling themselves, 'The National Benefit Association,' 'The Mutual Aid Hospital Association,' 'The Sanitarium,' and the like, offering, for small considerations, $6 to $10 annually, to issue certificates to members, agreeing to furnish, in the event of sickness or accident, board, lodging, medicine, nursing, medical and surgical attendance; and

"*Whereas*, Contracts have been made, and are being made, with the hospitals in towns and cities throughout the United States, to furnish divers persons, holding the certificates of such associations, board, lodging, nursing, medical and surgical attendance, all necessary surgical instruments, and medicines of the best quality, under such

regulations as the said associations shall from time to time prescribe, for the compensation of $1 per day in wards, or $10 per week in private rooms; and

"*Whereas*, We have already sufficient abuse of charity without permitting the development of another enterprise which thrives at the expense of hospital physicians and surgeons, who, per force of contracts made by said associations on the one hand, and by the hospitals on the other, must turn out at all hours of the night, without compensation, to further the interests of the 'one-man' institution for whose pecuniary benefit the scheme is devised:

"*Resolved*, That the members of the National Association of Railway Surgeons resent this new imposition upon the staffs of the various hospitals; that they acquaint the hospital authorities with the injustice of the scheme, and urge them to refuse such contracts as oblige their fellow-laborers in true charity to render professional services to the above-named benefit associations without compensation."

Dr. W. B. Outten, of St. Louis, read a paper entitled

A PLEA FOR MORE DETAIL IN THE TREATMENT OF RAILWAY INJURIES.

Dr. T. E. Russell, of Springfield, O., read a paper on

RAILWAY SURGERY,

in which he leaned toward primary amputation. He said in severe injuries to the arm, near the shoulder, requiring amputation, it often happens that the lesion is so near the articulation that it is next to impossible to secure a good flap by any methods laid down in text-books. A convenient and proper way, if the sound tissues favored the scheme, is to make the first incision in the course of the humerus, splitting the deltoid muscle and going directly to the shoulder-joint. A strong bistoury is introduced below and a little in front of the acromion process, and a longitudinal cut is made in the course of the limb to a point an inch and a half below the surgical neck of the humerus. At the middle of this incision the scalpel is placed in the wound, and carried obliquely downward in front and behind, making two lateral flaps, as it were. These lateral cuts should not be deep enough in front or toward the axilla to sever the arteries, but to make space for disarticulating the head of the humerus from the glenoid cavity. The remainder of the amputation is completed by returning to the lateral or oblique incisions—to the posterior first—and cutting each away till the arm is severed. The flaps adjust nicely, and the results are all that can be desired, if the healing processes meet with no mishaps.

Photographs were passed around of the cases on which Dr. Russell had operated.

Dr. H. H. Middlecamp, of Warrenton, Mo., advocated primary amputation where there was no possible chance of saving the limb. Injuries produced by railway cars were more profound and severe than those received otherwise, owing to the relative speed, the weight of the cars, etc. There is very little difference, however, between some railway injuries and those sustained in large manufacturing establishments where there is powerful machinery. The surgeon should exercise his judgment as to whether amputation should be performed immediately or delayed.

Dr. Alex. W. Atchison, of Denison, Tex., said it was surprising to find what little support the surgeon had in regard to primary amputation. He had searched the different authorities on this subject. Personally he would favor immediate operation.

Dr. R. Harvey Reed, of Mansfield, O., was in favor of the primary operation. When the surgeon waits for shock in severe railway injuries, or in a case where heavy machinery has gone over a limb, he only waits for the undertaker, for almost invariably the patient dies.

Dr. J. H. Bennett, of Wauseon, O., advocated primary amputation. One of the principal elements of reaction and repair is rest. The surgeon should, therefore, put the patient at rest as soon as possible after the injury. This could not be done, however, in the case of a badly mutilated limb, and, the surgeon should perform amputation before reaction sets in.

Dr. J. H. Murphy, of St. Paul, had been a railroad surgeon for twenty-four years. The time to operate depended wholly and solely on the judgment of the surgeon. A man without judgment was not fit to be a railroad surgeon. He did not think there was any surgeon who could go into court and testify when an amputation should be done.

Dr. W. L. Schenck, of Osage City, Kan., protested against one thought brought out in the paper, that the operation should be performed immediately. It was misleading to the young surgeon.

Dr. Mansfield, of Nebraska, called attention to the nervous system and brain as a distinction between railway and military surgery. The surgeon has no more joyous, hopeful subject to contend with than the boy who works on a railroad; whereas in military surgery the excitement during engagements is such that any injury is accompanied by a severe shock that will kill the patient. Where a patient had sufficient vitality to withstand an operation, he would not hesitate to perform it.

Dr. Allen, of Liberty, Mo., said gunshot wounds were rarely followed by much hemorrhage. He had never seen a severe hemorrhage during the whole war; whereas in railway injuries one of the prominent features is hemorrhage. This he thought was a sufficiently striking distinction between railway and military surgery.

With regard to operating, he presumed no surgeon would operate on a pulseless patient, or one in whom collapse would develop following shock. When, however, the indications were such as to justify an operation, he would certainly do it.

Shock, he thought, could be overcome by alcoholic stimulants, coupled with large doses of morphine, one-half of a grain of the latter, if necessary, followed by the use of chloroform. He believed that ninety-five per cent. of all the cases of shock could be thus overcome. If the pulse rallies under chloroform, he regards it as a sign of success.

Dr. S. S. Thorn, of Toledo, O., would operate if the patient rallied under an anæsthetic. He then referred to the septic period. Somebody wrote: "Woe to the surgeon who operates in this period." According to his observations, patients operated upon during the septic period, as a rule, died.

Dr. Outten said there was one element that had borne him down and which he had been thoroughly incompetent to treat, and that was shock. He would venture to say, in violent railway injuries, that thirty-three and a third per cent. of the cases die of shock before the surgeon can interfere.

Dr. C. B. Miller, of Lawrenceburg, Ind., said in railway injuries and accidents the shock is greater, for the reason that in a large number of cases those who are injured on railways see the object that is coming; while those who are wounded in the army, are wounded without knowing they have been struck until a short time after.

He could not agree with Dr. Allen, who had said that gunshot wounds rarely gave rise to much hemorrhage. He had made a great mistake, for they were much more liable to bleed than some of the injuries received on railroads.

Evening Session.

Dr. Reed read a communication from the Secretary of the American Public Health Association, the latter requesting the former to appoint some member to prepare a paper on Railway Sanitation, to be read at the next annual meeting of the Association, to be held in Brooklyn, N. Y., October 23d, 24th, and 25th.

No action was taken on the communication.

Dr. Robert Barclay, of St. Louis, read a paper entitled

THE WHISTLE SIGNAL,

in which he recommended aural tests to be scientifically applied to all railroad employees just as color tests are now applied.

Dr. Murdock thought the suggestions offered by the essayist were good. The engineer should have a good ear as well as a good eye, and considerable attention had been given to the latter of late in the employment of engineers, firemen, and pilots on vessels. The matter of the ear should engage the future attention of railway surgeons, and he would suggest that they be included under one head, if it is thought well to act on the suggestions of the essayist, as ophthalmology and otology usually go together.

Dr. Adolph Alt, of St. Louis, read a paper entitled

PTERYGIUM AMONG RAILROAD MEN,

which was referred to the Committee on Publication.

Recording Secretary Stemen made a stirring appeal for the spread of the sentiments which gave rise to the formation of the Association.

The Corresponding Secretary read a few of the many letters he had received from the general managers of railroads pertaining to the organization, the tenor of which was very flattering to the Association.

Second Day, May 3d—Morning Session.

Dr. Alexander W. Atchison, of Denison, Tex., read a paper on

RAILROAD STRETCHERS.

The paper was discussed by Drs. Mansfield, Outten, and A. W. Ridenour, of Massillon, O.

A further discussion on the establishment of union hospitals followed at this juncture, which was participated in by President Jackson, Dr. W. P. King, of Kansas City, and Dr. Ridenour.

Dr. Fulton, of St. Paul, read a paper on

RAILROAD INJURIES OF THE EYE.

Afternoon Session.

Dr. Reed contributed a paper entitled

CLINICAL OBSERVATIONS ON SOME OF THE EFFECTS OF DIRECT AND INDIRECT TRAUMATISMS OF THE BRAIN.

The paper passed without discussion.

OFFICERS FOR 1890.

President, Dr. J. B. Murdock, Pittsburg, Pa.; *First Vice-President*, Dr. W. B. Outten, St. Louis, Mo.; *Second Vice-President*, Dr. Elliott, Atlanta, Ga.; *Third Vice-President*, Dr. W. B. Rogers, Memphis, Tenn.; *Fourth Vice-President*, Dr. J. F. Pritchard, Manitowoc, Wis.; *Fifth Vice-President*, Dr. G. P. Conn, Concord, N. H.; *Sixth Vice-President*, Dr. T. P. Livingston, Plattsmouth, Neb.; *Seventh Vice-President*, Dr. F. J. Bancroft, Denver, Col.; *Recording Secretary*, Dr. C. B. Stemen, Fort Wayne, Ind.; *Assistant Secretary*, A. G. Gumaer, Buffalo, N. Y.; *Corresponding Secretary*, Dr. E. R. Lewis, Kansas City, Mo.; *Treasurer*, R. Harvey Reed, Mansfield, O.

The Association then adjourned to meet in Kansas City the first Thursday in May, 1890.

The Propeller Bone.—Dr. C. M. Dodson, writing in Leonard's *Illustrated Medical Journal*, says that the innominate bone is a facsimile of a marine screw propeller, and that he has used it in propelling a pleasure boat, fifteen feet in length, finding that the boat could be driven by it very satisfactorily. He thinks, therefore, that it may at last receive a name, and finds none more appropriate than that given above.

INDIANA STATE MEDICAL SOCIETY.

Fortieth Annual Session, held at Indianapolis, Ind., May 1 and 2, 1889.

The President (Dr. W. H. Wishard) called the Society to order.

THE SECRETARY'S REPORT

showed a gain of six county societies and seventy members over last year. The mortality list was not a lengthy one, but included two ex-presidents—Drs. W. H. Field and Benjamin Newland—also Dr. Moses Baker, of Stockwell, the first surgeon in Indiana to perform ovariotomy, and Dr. Mary Thomas, of Richmond, the first female doctor to become a member of the Society. About eighty out of the one hundred counties in the State have county societies, and all members of the State Society. A man cannot be a member of the State Society unless a member of the County Society, and being a member of the latter makes him a member of the former. The fees are paid to the County Society, and the names and fees turned into the State Society. For one dollar a man becomes a member and receives the "Transactions." The Society is the largest and most thoroughly organized State medical society connected with the American Medical Association. It can be safely said that in the near future public opinion will compel every physician to unite himself with the State Medical Society, thus to sustain the honor and dignity of the profession, and rebuke charlatanism and obtrusive effrontery under whatever guise they may appear. The whole number of members is now twelve hundred. The Treasurer's report showed the financial affairs of the Society in a prosperous condition.

Dr. Lomax, of Grant County, at the meeting of last year, proposed a plan

FOR THE IMPROVEMENT OF THE INDIANA MEDICAL COLLEGE.

It was for the county medical societies to secure the pauper practice in the counties, and donate the fees paid to the college. The duties of the pauper practice could be done by the members in turn, and would not be hard on any one. The committee reported adversely to this proposition, for the reasons that the State Society could not well manage a large, well-endowed college, as a vast amount of competition and rivalry would arise among the applicants for faculty and managing positions, and everything would be in confusion. Then, the county societies could not get the pauper practice in all cases, if they tried. There were so many irregular physicians, and so many regular ones who do not belong to the county societies that they would underbid. The committee also reported that in Indiana there are 3,243 regulars, or allopaths; 287 eclectics; 199 homœopaths; 142 physio-medicals; and 192 unclassified. Less than one-third of the regulars are not connected with the county societies.

THE COMMITTEE ON ETHICS

had some delicate matter to attend to, which was handled with all due care and tact. A committee appointed for that purpose endorsed the National Formulary.

Dr. Kate Corey, a graduate of Michigan University, and Superintendent of the Methodist Hospital at Foochow, China, was introduced to the Society, and made a brief speech. Her great work was related by the Secretary, and a motion to make her an honorary member was passed without a dissenting voice.

The Committee on Ethics asked the appointment of a committee to draw up some uniform rules by which a member shall be tried by the county societies. The request was granted.

Dr. E. S. McKee, of Cincinnati, was introduced as delegate from the Ohio State Society, and delivered a message of good-will and greeting.

OFFICERS ELECTED.

President, Dr. J. D. Gatch, Lawrenceburg; *Vice-President*, Dr. S. Y. Yonte, of Lafayette; *Secretary*, Dr. E. S. Elder, Indianapolis; *Assistant-Secretary*, Dr. T. C. Kennedy, of Shelbyville; *Treasurer*, Dr. F. C. Fergueson, Indianapolis.

THE PRESIDENT'S ADDRESS

was a retrospect of the practice of medicine for the past half-century. He considered this period one of great progress in science as well as other things. The great thing is, have we as medical men kept abreast with the times? He endeavored to make his answer convincingly in the affirmative. The primitive Indiana doctors had not great advantages of education. In 1817 the Transylvania University at Lexington, Ky., opened a Medical Department, and in 1818 John L. McCulloch was the first graduate in medicine west of the Alleghanies. This soon grew to the second medical school of the United States. In 1819 the Medical College of Ohio, at Cincinnati, and in 1837 the Medical Department of the University of Louisville were formed. Not ten per cent. of the physicians of Indiana in 1825 were graduates, and only twenty to twenty-five had taken one course in medicine.

EPHRAIM McDOWELL WAS NOT A GRADUATE,

but after thirty years of practice the University of Maryland gave him the degree of doctor of medicine honorary. There was but one medical journal in the United States in the early part of this century, the *Medical Repository*, of Philadelphia. Obstetric business was all in the hands of females. It was necessary. Physicians were scarce, women were healthy, and nature needed but little aid. Such an affair was quite a celebration to the female portion. Not to be invited was a great slight. The physicians were looked upon with suspicion in this line of practice, and were not summoned unless there was great necessity. When summoned the news spread like wildfire, and the neighborhood turned out *en masse*, as though it was a funeral or a wedding. A log cabin twelve by fourteen feet would be literally packed by women and children, with sometimes a few men. Early settlers were almost exempt from tuberculosis, diphtheria, and cerebro-spinal meningitis. Only the strong and healthy ventured to the front. In winter pleurisy and pneumonia raged. The doctor was a dealer in second-hand goods. Four-fifths of the fatal cases had been treated by the old women till the case was hopeless. He well remembers when quinine first came into use. He was given a prescription consisting of thirty grains of quinine, ten drops of dil. sulphuric acid, and six ounces of water; dose, teaspoonful, to be taken three times a day with great care. He has known

AN OLD THUMB LANCET

to descend as an heir-loom from the father to son and grandson, and had drawn more blood than some regiments in the late war. An old theory was that if you would draw blood from the right arm when the pain was in the left, you would draw the pain across the heart and kill your patient. The curtain was first lifted in the treatment of fevers by Dr. Lunsford P. Yandell, of Louisville, and the light has been shining more and more ever since. He thought the domain of surgery had made wonderful progress in the last fifty years. The good dame of fifty years ago would show her ten or a dozen sons and daughters, the pride of her life, the hope of her future. To-day we are shown one son or daughter and a poodle dog—often only the poodle dog—all the hope of this family. The doctor then paid some

SCATHING TRIBUTES

to criminal abortion, and went on to discuss the fortieth anniversary of the Indiana State Medical Society. Organized June 6, 1849, twenty-eight physicians were present, of whom now only five are living, four in Indiana and one in Texas.

DR. KING, of Indianapolis, related the incident of his father and mother both dying within seven minutes of each other, from being bled, forty years ago, only a few miles from Indianapolis.

DR. LEECH, of Indianapolis, spoke on criminal abortion, and told an interesting story of how he saved two twin girl babies, and what pleasure he derived by seeing them playing on the hillside as he drove past their home.

DR. G. W. H. KEMPER, of Muncie, Ind., read a paper entitled

ANTISEPTICS IN NORMAL LABOR

The doctor had attended nine hundred cases of labor in civil practice, and in no one instance had he used a single antiseptic measure before or after parturition. Two of these women died, one of puerperal convulsions and the other of acute pneumonia. He had no case of severe puerperal fever among his nine hundred cases. The cases were of the average gravity, as proven by the particulars which were given. He had some cases which would have demanded the antiseptic treatment if any did. They did not get it, and recovered all the same. If he had used this treatment what encomiums he could have bestowed upon the practice! A class of recent converts to antiseptics charge that all who do not avail themselves of this practice are criminally negligent. The health officer's reports in Delaware County—the county in which the writer resides—gives a ratio of 7.5 deaths per 1,000. This included the practice of doctors, midwives, and old women; 10 out of 34 deaths were due to accidents which could not be affected by antiseptics, which presents a more favorable outlook than the hospital practice of the larger cities with antiseptic precautions. He considered the paraphernalia and details of antiseptic midwifery, as laid down by Thomas, Garrigues, and others, to be both expensive and tiresome. He had, without the formality of an introduction, witnessed a number of deliveries within five minutes from his entry into the house. In such cases the time for the antepreparatory antiseptic treatment of Professor Thomas would not equal in opportunity that of a death-bed repentance of a subject of Judge Lynch. While he would do something toward antiseptics where it seemed necessary, yet he would not feel it advisable in every case of normal labor, when a patient is surrounded by healthy environments, to attempt to carry out a complicated routine of practice which his experience teaches him is uncalled for.

The doctor, in conclusion, submitted the following aphorisms:

1. The history of obstetrical practice teaches us that the lying-in hospital has always been a place of danger and mortality, therefore it is obligatory on those who have charge of those institutions to utilize every antiseptic measure known to the profession to save life.

2. The experience of country practitioners teaches us that women who are confined in healthy isolated rural homes are not subjected to the contaminating influences of an ochlesis, and consequently do not require all the precautions of those exposed to hospitals, or even to the atmosphere of city life.

3. That the country practitioners of medicine will generally show a lower rate of mortality in obstetrical cases than city practitioners, simply for the reason that they practise in healthier localities and less exposed to contagious influences, and possibly have a healthier class of patients.

4. That the insinuations of a number of late writers on antiseptic midwifery, that the death-rate in obstetrical practice of country practitioners is high, are not true, as shown by statistics.

The drift of the discussion was not in accord with the views expressed in the paper.

DR. JAMES F. HIBBERD, of Richmond, Ind., read

AN INTERESTING PAPER ON MYXŒDEMA,

with report of case. His patient was a lady, aged fifty,

previously slight in build, but although her general health had been failing during several months her weight was one hundred and forty-three pounds when she consulted him. She suffered from a sense of general weariness, abatement of mobility, disinclination to active exercise, and lessened ability to concentrate her mind on any important affair. Her skin had become dry, pale, and sallow, and was swollen and puffy, particularly about the feet and hands, but gave her most discomfort from the thickness and weight of her eyelids and surrounding tissues. Her limbs had lost their normal suppleness, and she walked with an unsteady gait; her hands were stiff and swollen, making it almost impossible to hold a pen or write. She complained of general subjective cold, and her temperature was found subnormal. She presented a depreciation of vital activity and a sluggishness of mental operations. Examination displayed no special error in respiratory, circulatory, urinary, or uterine functions.

The patient was advised to cease her literary occupations; moderate outdoor exercise, with quinia, strychnia, and iron soon brought a slow improvement in her condition, though she still presents a remnant of her serious ailments of two years ago. This is a typical case of myxœdema, a mild attack of favorable progress and promising prognosis, but presenting all the characteristic symptoms of the disease.

THE FIRST DESCRIPTION OF MYXŒDEMA

was by Gull in 1874, and in 1876 Ord gave a thorough exposition of its leading characteristics and proposed the name, as he declared mucin was found in the tissues of all its victims. Hammond gave a short description of the disease in 1881, and the treatises on general practice since have had chapters devoted to myxœdema.

The *American Journal of the Medical Sciences* published two papers, in July and August of 1888, by Drs. Hun and Budden, giving thorough details of four cases under their observation, and of the literature of the subject. Excluding cases due to the extirpation of the thyroid gland for disease, and those associated with idiocy and cretinism, there are one hundred and fifty-four cases of idiopathic myxœdema more or less completely reported, according to their researches. The conclusions reached by them are: There are more than three times as many females affected as males; the average age for the beginning of the disease is forty years; chief etiological factors are excessive child-bearing, excessive hemorrhage, mental shock and worry, and injuries, especially of the head. Myxœdema appears to manifest itself by very characteristic symptoms, which affect especially the cutaneous, nervous, and vascular systems. Cutaneous: Skin swollen without pitting, dry, scaly, and cold; hair and teeth frequently fall out. The mucous membranes are swollen but their secretion is increased, while perspiration is absent or greatly diminished. Nervous system: Mental sluggishness and impairment; insanity frequent; impairment of sensibility in most cases; in all cases muscles act feebly; numbness and neuralgic pains are often present. Muscular system: Pulse usually slow and small, and heart presents some abnormality. Blood often in an anæmic condition, sometimes severe hemorrhages. A clear, succinct, comprehensive statement of our present knowledge of this disease is found in the summary of Dr. Ord, printed in the London *Lancet*, June 2, 1888, and copied in the *Medical News*, Philadelphia, June 23d.

The author concludes with the statements that he thinks myxœdema a distinct disease with well-marked symptoms; its diagnosis is easy and certain; it is not amenable to treatment, and persons affected with the disease never regain a perfectly normal condition. He thinks it quite possible to meet associated disturbances with remedies, and by proper use of exercise and rest to carry persons through years of comparative ease.

Dr. W. N. Wishard, of Indianapolis, read a paper entitled

URETHRAL STRICTURE IN THE MALE.

He followed Otis' classification and location of stricture. He discussed the subject of electrolysis in stricture, but was unsatisfied in his own mind as to its utility. At present he finds no method so successful as Otis' operation. It is the only method in which he feels confident of curing the stricture. Absence of fatal, or even serious results, have led him to consider it a safe method, though he avoided operating in cases of kidney trouble.

Dr. A. G. Porter, of Lebanon, Vice-President of the Society, read a paper entitled

NERVOUS SICK-HEADACHE.

Concerning this disease, he said, little was written and little known; the treatment was unsatisfactory, and the disease very frequent. He thought ninety-nine per cent. of cases are due to a deficient supply of blood to the brain or some part of it. An ounce of sherry wine or brandy, in a glass of soda-water, was good in many cases where there was a chill and depression present, but in many others was unadvisable. Valerian and assafœtida are very good, two or three drops of dilute hydrocyanic acid and an emetic, if the stomach is at fault. We must abridge hours of study or work.

Dr. Howes, of Richmond, has cured several cases, when due to stomach trouble, by bismuth and fluid extract of quassia.

CHOLETHOTOMY

was the subject of a paper by Dr. Miles F. Porter, of Fort Wayne. He favored the continuous suture after Tait's method.

"A Case of Suppurative Peritonitis" was the subject of a paper by Dr. G. W. McCasky, of Fort Wayne, and "Glaucoma" by Dr. A. Blitz, of Indianapolis.

THE NATURE AND ETIOLOGY OF TUBERCULOSIS

was the subject of a paper by Dr. R. F. Stone, of Indianapolis. He did not believe in the theory of contagion, and opposed bacteriology and all the ideas of Koch.

Dr. A. W. Brayton, of Indianapolis, admired the doctor's courage to write such a paper as this at this time; for it took courage to make such antiquated statements.

Dr. Theodore Potter, of Indianapolis, considered tuberculosis inoculable, and the only cause the tubercle bacillus of Koch. Where the tubercle exists the bacillus exists, and we have in the tubercle bacillus a positive diagnosis of tuberculosis. If the tubercle bacillus is excluded by a careful examination, we can exclude tuberculosis. Not to believe in the tubercle bacillus we might as well not believe in the spermatozoids which made us.

Dr. Stone, in reply, wished to be put on record that he was opposed to this fallacious theory of germs. "It is a myth. I do not believe in antiseptics only so far as it induces cleanliness."

BRONCHO-PNEUMONIA IN CHILDREN

was the subject of a paper by Dr. G. W. Vernon, of Indianapolis. He used this term purposely because he meant it, and thought it the proper term. He thought the burning of natural gas in this city had become a great factor. The houses had been kept too warm, and dry-mouth breathing was also coming to be a prominent cause. He thought the disease occurred more frequently among children than adults. The disease may commence in the tubes and extend into the alveola and *vice versa*, or may commence in the interstitial tissue. In treating the measles, whooping-cough, etc., we should keep under consideration the possibility of this disease.

Dr. Johnson, of Indianapolis, was pleased that the doctor insisted on the term broncho-pneumonia. He thought there were more recoveries from acute lobar pneumonia than from broncho-pneumonia, as the latter is apt to be neglected by the patient.

Dr. G. V. Woolen would only criticise the doctor in one point, and that is, that he scarcely went above the epiglottis or larynx in his genesis of the trouble. He thought the whole life of the respiratory organs was to be found in the head at the base of the brain. Catarrhal disease he thought essentially a disease of childhood; no man in this body who has not catarrh already will ever, in his opinion, acquire it.

THE HYDRO-THERAPEUTIC TREATMENT OF TYPHOID FEVER

was the subject of a paper by Dr. G. W. Smythe, of Greencastle, which was followed by a paper on

ATYPICAL TYPHOID FEVER,

by Dr. H. McCullough, of Fort Wayne. He thought irregular typhoid fever much more frequent than generally supposed.

Dr. M. F. Porter thought there were more cases of the atypical typhoid fever than the typical. Authors of text-books, he thought, had made a great mistake. He opposed the general routine treatment of typhoid fever by cold baths, yet he thinks cold baths in a great many cases are beneficial.

Dr. Leech thought the great question was, Are you capable of diagnosing a case of typhoid fever?

Dr. Lomax, of Grant County, had been studying typhoid fever for a long time, but could not now give a good definition of it. It had been thought that the disease should be given a name having some connection with the spleen. He considered the classification of Trousseau into adynamic, ataxic, and typhoid fevers the best.

Dr. Mendenhall, of Richmond, said there were 300,000 cases of typhoid fever in the United States each year, and 30,000 of these die. We ought to be interested in this disease. We can never know exactly how to treat it until the disease is understood, and he believed we do now understand it. He believed it was caused by germs. When we can kill or stop the production of these germs the cause will be gone and the disease will stop. If we give quinine we will get trembling, nervous conditions, and hallucinations. If we leave off this and tonics we will not have so much of this kind of trouble. Early in the disease he gives small doses of calomel or bichloride and turpentine, oft repeated—two drachms to one pint of turpentine emulsion and two grains of calomel. He does not use antipyretics.

The discussion on this disease grew quite lengthy, and a gentleman rose to a point of order, saying we were already far behind the programme.

The President replied that he knew it, and we were leaving typhoid fever about where we found it.

Dr. Smythe, in replying, said the whole question was simply one of diagnosis. Will we permit our patients to die of secondary troubles or not? He uses Von Ziemssen's graduated bath and gives quinine in forty-grain doses, having given as high as seventy grains.

TENNESSEE STATE MEDICAL SOCIETY.

The Tennessee State Medical Society met in its regular annual session at Nashville, April 30th, May 1st, and 2d, with the President, Dr. T. J. Happle, of Trenton, in the chair, and the Secretary, Dr. D. E. Nelson, of Chattanooga, at the desk. The Treasurer reported $169.68 in the treasury. Much attention was paid to legislation, and it was reported to the Society that, as the results of forty years' labor, the Legislature had at last been persuaded to pass a law regulating the practice of medicine. Though this was far from perfect, yet it was a great gain, and all should give it their hearty support.

The following gentlemen were recommended to the Governor for appointment as a Board of Examiners: Drs. S. C. Deadrick, Knoxville; J. B. Murfee, Murfreesboro; D. D. Saunders, Memphis.

A resolution requesting the Legislature to pass the bill now pending, requiring the registration of births and marriages, was passed.

Election of officers resulted as follows: Dr. Duncan Eve, Nashville, *President;* Drs. Henry Berlin, Chattanooga; James B. Neil, Marshall, and J. P. C. Walker, of Dyersburg, *Vice-Presidents;* Dr. E. D. Nelson, of Chattanooga, *Secretary*, and Richard Cheatham, of Nashville, *Treasurer.*

The next meeting will be held at Memphis, the second Tuesday in April, 1890.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, May 3, 1889.

Francis P. Kinnicutt, M.D., President, in the Chair.

Dr. Samuel Sexton read the paper of the evening (see p. 589), entitled

THE CARE OF THE TEETH, FROM A MEDICAL PRACTITIONER'S STAND-POINT.

Dr. A. H. Smith thought the instruments shown by the speaker might be very useful in removing the little flaps of gum, a manœuvre which he had sometimes been rather embarrassed in executing with the instruments at his command.

Dr. Beverley Robinson said that earache, or even a discharge from the nose, was not infrequently due to some trouble with the teeth, but it was more common to find neuroses in the pharyngeal region from this cause. He believed that amalgam fillings were especially injurious, and it was his custom in cases of this kind, when the ordinary remedies failed, to send his patient to the dentist in order to have any amalgam fillings that might be present removed. He saw a patient recently who had been under his care some time ago. This man had suffered greatly from pain in the pharynx, especially at night, and no relief had been obtained by any of the remedies employed, such as sprays and local applications, or even from anodynes given in doses as large as was consistent with safety. There was no local trouble apparent. Finally, some amalgam fillings in his teeth were removed, and then his troubles ceased.

Some time ago he had attended a lady suffering from a very severe attack of mumps. After the disease had subsided there was considerable swelling left around the angle of the jaw. A needle introduced into the swelling gave no evidences of the presence of pus. As the swelling persisted, massage was finally employed, and this was followed by a discharge of pus into the mouth. On the second day after the massage was begun the lady complained of a feeling of "goneness" and weakness, and as this seemed to be connected with the massage the latter was stopped. The speaker asked whether massage ought to be used in cases like this, in which there was a suppurating process around a tooth, when medicinal means were of no avail, and surgical measures, for one reason or another, could not be employed. In this case the massage treatment certainly had a beneficial effect as far as the pain was concerned, but was it harmful in causing the absorption of the pus?

Dr. C. L. Dana said that he had never seen any nervous disturbances which could be attributed directly to the process of second dentition. Nearly all the neuroses of childhood, such as headache and the like, develop a little later than the period of dentition. He could not now recall many cases of reflex troubles from bad teeth. He had seen a few cases of brow neuralgia, accompanied by a dilated pupil and slight suffusion of the eye, which were apparently due to this cause. There was an old medical superstition which ought to be done away with, and that was that tic-douloureux was caused by bad teeth. He had had patients with this trouble who came

to him with nearly all their teeth pulled out, yet their pains continued as severe as before.

In hereditary ataxia there is sometimes seen a condition of the teeth resembling very closely that described by Hutchinson as characteristic of hereditary syphilis.

Dr. Joseph D. Bryant said that he saw no need of a special instrument for the removal of the gum flaps referred to by the reader of the paper. He had always found that scissors curved on the flat answered the purpose very well.

Dr. Clement Cleveland referred to a case of severe supraorbital neuralgia coming on every afternoon, in which the pain was so intense that the sufferer was compelled to go to bed. Many remedies were tried without avail, and finally a dentist was consulted. He first removed the filling from one of the wisdom teeth, and then, no relief following, extracted the tooth. There was found to be commencing degeneration of the nerve, but the loss of the tooth caused no diminution of the pain. A cure was finally effected by means of quinine.

Dr. V. P. Gibney said that he had found peg-teeth very commonly in hospital children suffering from joint lesions. Formerly these teeth were called scrofulous or strumous, but now they would probably be called tuberculous teeth. He had seen very few cases in which the teeth were like those described by Hutchinson as the teeth of hereditary syphilis.

Dr. Sexton, referring to the case mentioned by Dr. Robinson, said that one of two things would have probably been found to exist: either the tooth had suppurated at the root, in which case pressure from pus or gases might have caused the trouble; or if the tooth possessed its pulp, it might be that the amalgam filling was so near that it would transmit the heat or cold. He did not mean to convey the idea that deafness was caused directly by the presence of the diseased tooth, but desired simply to refer to the conditions in which deafness might be produced by reflex causes. He referred to a case which he had seen some time ago, of a patient who had pains in the ear, chest, and various other places. He could find no trouble in the ear, and Dr. Robinson, to whom he referred the patient, could find nothing wrong in the chest. Examination of the mouth showed the presence of a carious tooth; this was extracted, but no relief followed. On more careful examination, however, an old root was found in the jaw, and when this was removed the patient recovered entirely. In the case of so-called dead teeth, as long as they remain unfilled the pus and gas will escape, but when such a tooth is filled there is no chance for the escape of the pus and gas. Filling a dead tooth is, therefore, bad surgical practice. He did not agree with Dr. Dana, that tic-douloureux is never caused by the presence of bad teeth in the mouth. It might well be that no relief would follow the removal of the offending teeth, but this would not prove that they were not originally the cause of the trouble.

Dr. F. P. Kinnicutt and Dr. Wm. T. Bull then presented a report of a case of

PYLORIC STENOSIS RELIEVED BY LORETTA'S OPERATION.

(This paper will appear in a future issue.)

Dr. George L. Peabody said that a correct diagnosis in cases of this nature was extremely difficult to make. A diagnosis of pyloric stenosis might be made without much difficulty, but the trouble was to determine the nature of the stenosis, and whether it was such as would admit of stretching. For instance, there might be a localized peritonitis which had caused adhesions to a neighboring viscus, thereby occluding a perforation from an ulcer, and any disturbance of these adhesions would unseal this opening.

Dr. Kinnicutt said that the surgeon should always be prepared to abandon the operation if the conditions were found to be unsuitable, or to perform some other operation such as resection. It was, of course, impossible to make a full diagnosis of the exact condition present in such cases.

Dr. Bull said that the presence of adhesions had been considered a contraindication to this operation. It might be possible, however, in certain cases, to perform an enterostomy.

Dr. Kinnicutt said that this was the sixth case of pyloric stenosis that he had seen in the past two years. In four of these cases a small tumor could be detected on palpation. In those cases in which the tumor was easily movable no adhesions were found at the time of operation, but in those in which it was fixed, adhesions were found to be present. Whether this would prove to be a point of value in the diagnosis he could not say at the present time, but it seemed as though it might possibly be of some practical use in forming an opinion as to the probable success of an operation.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

SUCCESSFUL TREPHINING FOR CEREBRAL HEMORRHAGE—A CASE OF TRAUMATIC EPILEPSY—EXOPHTHALMOS CAUSED BY INTRANASAL OPERATIONS WITH THE GALVANO-CAUTERY—A CASE OF XANTHELASMA WITH MULTIPLE TENDON ENLARGEMENT—CAN FIBRES IN THE SPINAL CORD BE REGENERATED?—THE PRESIDENCY OF THE ROYAL COLLEGE OF PHYSICIANS—A REMARKABLE CASE OF TOTAL EXTIRPATION OF THE LARYNX WITH PARTIAL PRESERVATION OF THE VOICE—OUT-PATIENT WORK—A NOVEL DEPARTURE IN MEDICAL LITERATURE—THE REGISTRATION OF DEATHS—A NEW SCHEME OF NAVAL MEDICAL SERVICE—DR. CLIFFORD ALLBUTT.

London, April 22, 1889.

At the Clinical Society's last meeting several communications of interest were brought forward. Mr. Herbert Allingham related a case in which he trephined with success a patient who was the subject of head injury. A large blood-clot was found, not between the dura mater and the bone, but between the dura mater and the pia mater. The case was therefore one of cerebral hemorrhage, and as such Mr. Allingham said he believed it to be unique. The next paper was by Dr. Lees and Mr. Page, and gave an account of a case of epilepsy following injury, in which trephining was performed without success. The aura always began in the left foot. On percussing the skull, a tender spot was found situated in the posterior superior region of the right half of the skull, quite close to the median line. It was about an inch and a half in diameter, and its centre was about three-fourths of an inch behind the upper extremity of the fissure of Rolando. The patient was trephined over the tender area, and a disc of bone removed as near the median line as was thought safe. The symptoms were only temporarily relieved, and on the fifteenth day after the operation a violent fit occurred. Two hours later another followed, and it was so violent that chloroform was administered. The patient died under anæsthesia. At the post-mortem the pia arachnoid was found markedly milky in appearance over the whole convexity, and there was a considerable excess of subarachnoid fluid. There was hyperæmia and some softening of both gray and white matter at the site of the wound (which was perfectly healed). The inner surface of the skull-cap was found to be roughened behind the vertex, along the line of the longitudinal sinus. A small osteophyte was found situated three inches behind the coronal suture, and in the left line of attachment of the longitudinal sinus. It was one-tenth of an inch in length and the same in breadth, but was raised only about one-sixteenth of an inch above the level of the surrounding bone. The authors exhibited the skull-cap, and desired to obtain the judgment of the Society as to whether an osteophyte so small and in such a position could have been the cause of the symptoms? As to this, however, no decided answer was given by any of the speakers in the

ensuing discussion. Dr. Lees, in his reply, agreed with some of the speakers that attacks of "Jacksonian epilepsy" might arise from functional or nutritive lesions. The point, however, was that in this case the attacks were accompanied by an area of tenderness over the cortical centre, the nutritive or other irritation of which might be supposed to give rise to the fits. Either there must be some coarse lesion causing the fits, or we must give up the view that the presence of the zone of tenderness was to be taken as an indication of a brain lesion.

Dr. Semon then brought forward a case (patient shown) in which intranasal operations with the galvano-cautery for the removal of multiple recurrent mucous polypi had been succeeded by some symptoms of Graves' disease, viz., exophthalmos of the right eye, accompanied by Graefe's symptom (lagging behind of the upper eyelid when the patient looked down) and Stellwag's symptom (retraction of the upper eyelid). The symptoms came on within a day or two after the operations. Dr. Semon referred to some cases on record in which intranasal operations had been followed by the diminution or disappearance of symptoms of Graves' disease, but his case was an example of the hitherto (he believed) undescribed possibility of causing unfavorable changes in the domain of the sympathetic. A remarkable fact in connection with the case was that the intranasal operations had cured the patient of one neurotic symptom, asthma, from which he had begun to suffer soon after the appearance of the nasal polypi. Mr. Brudenell Carter said he was almost disposed to look upon the alleged connection between nasal operation and exophthalmos as a mere coincidence. He was convinced that in Dr. Semon's patient there was in reality little or no protrusion of the eyeball, and he suggested an operation by which the deformity could be remedied. Dr. De Haviland Hall suggested that the removal of the polypi should be proceeded with, in the hope that the opposite effect might now be produced. Operations on the nasal cavities seemed able to cause two sets of effects. Mr. Hutchinson then related a case of xanthelasma in a gouty patient, accompanied by multiple tendon enlargement.

In Dr. Tooth's recent Gulstonian Lectures ("On Secondary Degenerations of the Spinal Cord") at the Royal College of Physicians, he alluded to the controversies as to the possibility of the regeneration of fibres in the spinal cord. Experiments on the lower animals, he said, pointed to the possibility of some amount of repair in them, and also to its greater activity in young animals. In man, however, there was little evidence of this power. In a case under the care of Dr. Gowers and Mr. Horsley, however, complete recovery ensued on the removal of a tumor which, by indenting and pressing on the cord, had induced paralysis with increased reflexes in the lower limbs.

Sir Andrew Clark has been re-elected President of the Royal College of Physicians, receiving 112 out of 116 votes. Though the office is an annual one, the holder is usually re-elected for several years. Five years is the usual tenure of the post, but the late president (Sir William Jenner) was in office for seven years.

London, May 6, 1889.

A very unique case of total extirpation of the larynx was brought before the Clinical Society at its last meeting, in a joint communication from Dr. Greville Macdonald and Mr. Charters Symonds. The patient was a commercial traveller, aged forty-one, who was first seen in April, 1888, when laryngoscopic examination revealed a large, irregularly lobulated growth, occupying the anterior three-fourths of the rima glottidis. It was found by probing to be extensively attached to the infraglottic portion of the right cord. A small superficial ulceration was present on the posterior surface of the growth. A small portion of the tumor was removed for examination, and it seemed to be an epithelioma. Extirpation of one-half of the larynx was urged on the patient, but declined by him. Dr. Macdonald therefore removed the growth with the forceps. It was soft and friable, and there was free hemorrhage. On the following day the voice was restored. No trace of growth could be seen on laryngoscopic examination, but the left cord was uniformly thickened, rounded, and deeply congested, its movements, however, being perfect. A week later, a sharply defined silvery tract (two or three lines in diameter) was seen on its upper surface. Probing proved it to be minutely villous. The growth gradually increased, and an operation was again advised, but another opinion, while admitting malignancy, proved adverse to operation. By October 20th rapid increase had occurred and the growth resembled the one first seen in April but was more congested. Again, an external operation was advised, and Mr. Charters Symonds undertook to perform it. The trachea was opened above the isthmus, Hahn's tube inserted, and chloroform administered through the tube. An incision was then made in the median line, from the upper end of the incision already made to the hyoid bone. The thyroid cartilage was fully exposed and divided in the middle line. The crico-thyroid and thyro-hyoid membranes and the crico-thyroid muscles were then divided. The neoplasm was found to involve the whole of the left cord, and the anterior part of the right looked granular and swollen. The mucous membrane and perichondrium were divided close to the upper border of the cartilage and turned off. The superior cornu was divided and left. The inferior cornu was cut off and the mucous membrane then divided below the cords and back to the arytenoid, and, the ala being drawn forward, the attachment of the arytenoid to the cricoid was severed and this cartilage dissected out from the mucous membrane covering it. The anterior two-thirds of the right cord were then removed and the ends stitched forward with cat-gut. One vessel required a cat-gut ligature. Hahn's tube did not completely prevent blood trickling into the trachea, but a sponge passed into the cricoid ring above the tube was effectual. On the day following the operation Hahn's tube was replaced by an ordinary cannula, surrounded by sufficient gauze to plug the trachea. The patient was fed for five days by an œsophageal tube, but on the sixth day he could swallow, and on the seventh he got up. Three weeks after the operation he was quite well, and his voice was clear and good. A recurrence of the growth soon took place, however, and tracheotomy had to be performed in December. Later, the growth was seen budding on the right side, but being purely intralaryngeal, its total extirpation was proposed and carried out on December 22d, seven weeks from the date of the first operation. Hahn's tube was again used, and the median cicatrix opened. The larynx was isolated by dividing the attached muscles. The cricoid was then separated from the trachea and raised from the epiglottis without injury, the connection of the pharynx to the back of the thyroid divided, and the epiglottis cut through in its lower third. The cavity was stuffed as before, and a feeding tube passed by the mouth and retained. In two days the tube was removed and was passed every four hours by the wound. In ten days the patient was up and about, and on January 8, 1889, was able to swallow. By the end of the month the patient was quite well, save for the escape of saliva through the wound above the cannula. No complication of any kind occurred. The patient was shown to the Society, and appeared to be in good health and spirits. There was now no sign of recurrence. He could speak in a low gruff voice. This was managed by passing through the upper wall of the cannula a curved tube which ran up to the base of the epiglottis and admitted the air when he closed the cannula with his finger. The vocal sound was apparently produced by the vibration of two folds of the pharyngeal mucous membrane which ran backward from the epiglottis. The authors thought there was no previous case recorded of a patient able to speak after total extirpation of the larynx.

Out-patient work is not usually regarded as the most promising field for clinical study. I believe that some at least of the junior members of hospital staffs regard it as

so much necessary drudgery which has to be gone through before they can be promoted to take charge of beds. The amount of out-patient duty which has to be performed varies considerably in different cases, promotion being mainly dependent upon the occurrence of vacancies on the senior staff due to deaths and resignations. Nowadays there is at most hospitals a rule limiting the tenure of in-patient appointments to a period of twenty years. Formerly there was no such restriction, and, in consequence, when the seniors refused either to die or to resign, promotion from the junior ranks might be almost indefinitely postponed. The late Mr. Thomas Wormald, for instance, served as assistant-surgeon to St. Bartholomew's Hospital for a period of, if I remember rightly, thirty-four years, and actually became President of the College of Surgeons while thus holding a subordinate appointment. This was, of course, an extreme case. Within recent years, however, Dr. Cheadle worked at St. Mary's Hospital for sixteen years in charge of out-patients before becoming full physician in charge of beds. There are perhaps a few who would regard this as no hardship, and certain it is that there are many who value at their utmost the opportunities for clinical observation and instruction afforded by out-patients. Among these must certainly be numbered Dr. Byrom Bramwell, of Edinburgh. Dr. Bramwell is one of the assistant-physicians to the Edinburg Royal Infirmary, and, as such, one of the medical officers in charge of the medical out-patient department. He is an enthusiastic teacher and has lately conceived a plan for rendering his teaching available in reaching a somewhat larger circle than those who attend his class. For this purpose he has determined to publish, at fortnightly intervals, during the winter and summer sessions, an account of some of the more interesting and instructive cases which come before him in the out-patient rooms. A somewhat novel method is to be adopted. The cases will not be printed in narrative form, but the questions put to the patient, the patient's answers, and Dr. Bramwell's comments will be published *verbatim* from shorthand notes taken at the time. Dr. Bramwell styles his novel literary venture *Studies in Clinical Medicine*, and the first number of it lies before me as I write. It consists of sixteen small quarto pages, and comprises an account of four cases, together with a brief introduction and some remarks on out-patient practice, the mode of conducting it, and its difficulties, advantages, and disadvantages as a field for clinical teaching and original observation. There are three illustrations in black-and-white, and wood-cuts, lithographs, and, if needed, colored drawings, will, it is said, be freely introduced when required. The author states that he has been deeply impressed with the educational advantages which this method of publication affords by reading the published reports of Professor Charcot's polyclinic, and the plan certainly seems to be one admirably calculated to bring vividly before the mind's eye of a distant reader the various details of important cases.

A memorial has recently been forwarded to the Local Government Board by the Manchester and Salford Sanitary Association calling attention to defects in the existing arrangements for securing a due registration of the causes of death. The memorialists ask that a suggestion of the late Dr. William Farr may be carried out, viz., that registration medical officers be specially appointed in each district of the kingdom, whose duty it would be to view the body of every person dying without being attended by a registered medical practitioner, and after due examination and inquiry, either to give a legal certificate, or, if desirable, to withhold such certificate until an inquest should be held, or until the coroner should have declined to hold an inquest.

An entirely new scheme in connection with the naval medical service is about to be brought into operation. Under certain conditions civil practitioners are to be allowed to enter for temporary service in the Medical Department of the Navy. Numerous applications have already been received, and from among the medical officers who thus serve for short periods a Naval Medical Reserve will doubtless ultimately be formed.

Dr. Clifford Allbutt, of Leeds, has accepted a Commissionership in Lunacy. This will involve his retirement from practice.

THE CRIMES OF ALCOHOLISM AND UNCHASTITY.

To the Editor of The Medical Record.

Sir: The number of The Record for April 27th brought more than its usual compendium of valuable and suggestive matter.

The articles upon "Inebriety," "Narcotism," the plea for "Weekly Rest," and the "Prevention of Syphilis" have all a bearing in the right direction.

The crimes of alcoholism, narcotism, nervous and physical overwork, and unchastity in men or women, are far more needless than is generally supposed. False views held and morbid states of thought and feeling cherished are their living germs. In detecting and destroying these insidious sources of moral and physical disorder the trusted, conscientious physician can do more than all the clergy combined. Dr. Gowers' clear statement of the principles so earnestly maintained by the lamented Acton is as noble as needful and true.

I thank you for your added indorsement, not only on my own behalf but for two young men under my care to whom this article may prove of incalculable benefit. With sincere esteem,

Respectfully yours,
C. A. Greene, M.D.

Castile, N. Y.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 19 to May 25, 1889.

Forwood, William H., Major and Surgeon. By direction of the Acting Secretary of War the leave of absence on surgeon's certificate of disability granted in S. O. No. 35, April 8, 1889, Department of Dakota, is extended one month on surgeon's certificate of disability. Par. 13, S. O. 118, A. G. O., Washington, May 22, 1889.

Middleton, Passmore, Major and Surgeon. Will as soon as practicable after his arrival at Fort Trumbull, Conn., proceed to Fort Warren, Mass., and report for temporary duty until the return of the post surgeon from detached service with batteries of the Fourth Artillery, ordered to Atlanta, Ga. He will then return to his proper station (St. Francis Barracks, Fla.). Par. 2, S. O. 113, Headquarters Division of the Atlantic, Governor's Island, New York City, May 18th.

McElderry, Henry, Major and Surgeon. Granted leave of absence for one month, to take effect upon completion of his duties as a member of the Army Medical Examining Board in New York City. Par. 4, S. O. 117, Headquarters Division of the Atlantic, Governor's Island, New York City, May 23, 1889.

Palzki, J. H., Major and Surgeon. Granted leave of absence for twenty-one days. Par. 1, S. O. 44, Headquarters Department of Arizona, Los Angeles, Cal., May 18, 1889.

Appel, Aaron H., Captain and Assistant Surgeon. By direction of the Secretary of War the leave of absence granted him in S. O. No. 38, April 16, 1889, Division of the Missouri, is extended twenty days. Par. 2, S. O. 114, A. G. O., Washington, May 17, 1889.

STEPHENSON, WILLIAM, Captain and Assistant Surgeon. By direction of the Secretary of War is granted leave of absence for four months, with permission to go beyond sea. Par. 15, S. O. 114, A. G. O., Washington, May 17, 1889.

RAFFERTY, OGDEN, First Lieutenant and Assistant Surgeon. Granted leave of absence for one month. Par. 3, S. O. 29, Headquarters Department of Texas, San Antonio, Tex., May 13, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending May 18, 1889.

WHITING, ROBERT, Passed Assistant Surgeon. Ordered to the receiving-ship Minnesota.

HARMON, G. E. H., Surgeon. Detached from the Naval Academy and ordered to the Constellation.

LOWNDES, C. W. F., Assistant Surgeon. Detached from the Naval Academy and ordered to the Constellation.

ARNOLD, W. F., Assistant Surgeon. Detached from the New Hampshire and ordered to the Pinta.

RUSH, C. W., Passed Assistant Surgeon. Detached from the Pinta, to proceed home, and wait orders.

MCCLURG, W. A., Surgeon. Ordered to the Bureau of Medicine and Surgery.

STILT, E. R., Assistant Surgeon. Detached from the Bureau of Medicine and Surgery and ordered to the New Hampshire.

ECKSTEIN, H. C., Surgeon. Ordered to the Marine Rendezvous, Philadelphia, Pa.

BRADLEY, M., Medical Director. Detached from Marine Rendezvous, Philadelphia, Pa., and to continue on special duty, Philadelphia.

RUTH, M. L., Surgeon. Granted another year's leave of absence.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending May 18, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	19	1
Scarlet fever	185	30
Cerebro-spinal meningitis	2	2
Measles	134	5
Diphtheria	178	57
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

NARCEINE HYDROCHLORATE.—Most of the narceines of commerce are of varying constitutions; in all probability they contain foreign substances; this, at least, seems the only tenable explanation of the widely differing statements in chemical literature as to the melting of this alkaloid. While the therapeutic availability of narceine in the alkaloid form is impaired by its poor solubility (1 part in 250 of boiling water) and by the difficulty of determining its condition of purity, its hydrochloric salt is notably free from these drawbacks; and this appears, therefore, to be the most available form in which to exhibit narceine as a medicine. Chemically pure narceine hydrochlorate comes in the form of short, stout, lustrous prisms, which are soluble in all proportions in boiling water. Its solubility in cold water vastly exceeds that of the free alkaloid. The most practical solvent for the hydrochlorate is water containing a small admixture of alcohol. According to the clinical tests quoted by Erlenmeyer and Reissner, the chief special value of narceine is in its use as a sedative and hypnotic in psychiatric diseases; on which field of practice it has, in most cases, yielded results superior to those of morphine. Also for a hypnotic and sedative in general it has proved exceedingly valuable: according to Debout's reports, a dose as small as 0.03 gramme (½ grain) suffices to induce a quiet sleep without oppressive dreams, and not followed by headache on awaking. According to Oetinger, Petrini, Sichting, and others, it is highly approved in coughing-spells; and in sciatica and neuralgias is preferable to morphine.

THE EYESIGHT OF SCHOOL-CHILDREN.—Dr. De Mets, of Antwerp, has just made known the results of his examination of the eyes of the children attending the primary schools of that city. He examined 7,040 scholars and directed his attention chiefly to the state of their refraction and their chromatic sense. Their ages ranged between seven and fourteen years, so that it is not to be wondered at that he found a very small percentage of myopes among them. Only 2.13 per cent. were myopic, and of these nearly one-half had but one dioptre of myopia. Cohn, on the other hand, found 6.7 per cent. of the children in German elementary schools to be suffering from more than one dioptre of myopia. Dr. De Mets thinks that this great difference between the two countries is due to a hereditary predisposition peculiar to the race; but he also admits that the construction, furnishing, and lighting of the schools have a great influence on the development of myopia. Thus in nine girls' schools which were well lighted there was 1.74 per cent. of myopes, as against 4.83 per cent. in three schools badly lighted. And as regards boys, the figures are equally striking—viz., in nine well-lighted schools the percentage was 1.69, as against 2.67 in badly lighted buildings. Dr. Deneffe recently pointed out the superiority of the chromatic sense in woman, and Dr. De Mets' observations confirm this statement as regards female children. He thinks it is due to the fact that girls are so much more in contact with colors in their needlework, and that thus their color-sense is educated, and he thinks with Dr. Deneffe that the appreciation of colors should form part of the regular school course.—*The Lancet*, November 17, 1888.

THE FOUNDER OF THOMSONIANISM.—Thomson was a man of indomitable energy, born in the wilds of New Hampshire in 1769, before the days of medical schools, and when but few foreign drugs were imported. With the resources of a genuine Yankee, he betook himself to the woods, and made a rude study of the roots and herbs indigenous to the stubborn soil. His theory was, that all disease was owing to "canker in the stomach," and, reasoning from this, it was evident that one kind of canker caused measles, another kind caused scarlet fever, or canker-rash, and so on through the long list. These various cankers he numbered 1, 2, 3, etc., and gave to each number a specific remedy of a corresponding number. Thus, canker No. 1 must be met by lobelia; but, if the inside of the stomach was left cold, it must be warmed up by No. 2—cayenne pepper. If, during this process, the patient becomes nervous, or has convulsions, he must be treated to No. 3—nerve-root or skunk cabbage. Steaming was an adjunct in this process, and this consisted in subjecting the victim to the steam of vinegar and water. The apparatus was an open-bottomed chair, in which the patient was seated naked, but enveloped in a comforter. Underneath the chair an iron basin was placed, filled with water and vinegar, into which was plunged a red-hot stone. During this process, the poor wretch was treated to alternate doses of lobelia, cayenne pepper, or skunk cabbage, according as he was hot, cold, or "had fits." This ordeal was repeated daily, or oftener, until the subject was either cured or killed.—DR. JOHN CROWELL.

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Original Articles.

A CASE OF CICATRICIAL STENOSIS OF THE PYLORUS RELIEVED BY LORETA'S OPERATION.[1]

BY FRANCIS P. KINNICUTT, M.D.,

ATTENDING PHYSICIAN TO ST. LUKE'S HOSPITAL AND THE NEW YORK CANCER HOSPITAL,

AND

WILLIAM T. BULL, M.D.,

ATTENDING SURGEON TO ST. LUKE'S HOSPITAL, AND THE NEW YORK HOSPITAL.

ON May 26, 1888, P. S——, male, aged thirty-eight years, was admitted to my wards in St. Luke's Hospital. The patient brought a note from my colleague, Dr. William Bull, with the request for a diagnosis of his case.

Previous history.—The patient states that he enjoyed good health previous to eighteen months ago, when his digestion began to trouble him. The ingestion of food was speedily followed by distress and pain, there were acid eructations, much flatulence, and obstinate constipation. At a later period of his illness vomiting occurred, at first once in two or three days, gradually, at least once daily, the vomiting being copious in character. On numerous occasions, but not recently, the vomited matter was chiefly of a "coffee-grounds" character. He progressively lost flesh and strength, and finally was wholly incapacitated for work. He had sought relief from various sources, and had been under treatment in the Roosevelt Hospital, but with only a slight and temporary amelioration of his symptoms.

Condition on admission.—The patient has a cachectic appearance, is anæmic, poorly nourished, and weak. He vomits usually once daily; the vomited matter is copious in amount, and consists apparently of most of the food, partially digested, taken during the previous twenty-four hours. He suffers from constant epigastric distress and pain, from foul-smelling and acid eructations, and from obstinate constipation. The physical examination of heart, lungs, liver, and spleen is negative. The urine contains neither albumen, glucose, nor casts. The abdomen is distended, and the contour of the stomach is plainly visible through the thin abdominal walls. Its peristaltic movements, the waves passing from left to right, are plainly seen; loud succussion is heard not only on palpation, but on any movement of the patient. No distinct tumor is appreciable, although a sense of unusual resistance is detected over the pyloric area. Penzoldt's modification of Piorry's method was employed to demonstrate the presence of dilatation of the stomach. It consists in withdrawing the contents of the stomach by means of the œsophageal tube, and then refilling the organ with fluid. By noting the lower limit of dulness thus produced, the lower border of the stomach can be accurately determined. It was found to reach a point four and a half inches below the umbilicus in the median line. The capacity of the stomach was found to be about 2,200 ctm. The history and physical signs permitted of an easy diagnosis of dilatation of the stomach; the above described methods of investigation demonstrated the extreme degree of the dilatation. Persistent gastrectasia of this degree is produced only by pyloric stenosis, which is practically either of a cancerous or cicatricial character; cicatricial stenosis may be regarded as caused by gastric ulcer.

A differential diagnosis between the above forms is most desirable with the view to prognosis, and to surgical interference and its method. The history of the illness, the condition of the patient, the physical examination, often furnish no distinguishing points, and mistakes in diagnosis are frequently reported.[1] Since the winter of 1885 five cases of extreme gastric dilatation from pyloric stenosis have fallen under my personal care. In the first case,[2] all the symptoms and physical signs of cancer of the stomach were present in a marked degree; a pyloric tumor was easily palpated. A diagnosis of cancer was made, only palliative treatment was employed, and at the autopsy cicatricial stenosis was found to exist.[3] In the three succeeding cases,[4] which have been published, pyloric stenosis from cicatricial contraction was diagnosticated, and found on surgical exploration, or after death. In all, the presence of a pyloric tumor, of small size, was easily demonstrable. The fifth case is the subject of the present paper; a sixth, in which I believe the stenosis to be of the cicatricial form, is at present under observation.

With the view of determining the probable character of the stenosis in the present case, the contents of the stomach were submitted to a very careful chemical examination for ten consecutive days, by the methods described by me in a former issue of this journal.[5] A test meal was given to the patient daily, and the gastric contents removed, undiluted, by means of the stomach-tube, about four and a half hours later, and examined. Free hydrochloric acid was found in all the specimens; its percentage was carefully estimated, as well as the absolute acidity of the gastric contents. Table I. summarizes the results of the examinations, made by the gentlemen of the house staff, Drs. Collins, Southworth, and Vaughan, to whom I wish to express my indebtedness for their efficient assistance in my investigations.

It will be seen that the average percentage of free hydrochloric acid is about one-third less than that found in the normal stomach during digestion, which may be regarded as 0.2 per cent.

The gross or absolute acidity is that of the hydrochloric acid and the organic acids (lactic, acetic, butyric, etc.) combined, and will vary as the fermentative processes exist in greater or less degree from day to day.

The constant presence of free hydrochloric acid during digestion being demonstrated, the probable cicatricial, *non*-cancerous nature of the stenosis was diagnosticated. The diminished percentage of hydrochloric acid present inclined me to believe that the ulcer had healed, this acid being found in excess in the presence of active gastric ulceration. Its diminished secretion found an explanation in the gastric catarrh which existed.

Based upon the results of the above-described methods of investigation, a diagnosis of dilatation of the stomach from pyloric stenosis, cicatricial in character, was made, and my surgical colleague, Dr. Bull, consented to attempt to relieve the condition by Loreta's operation of digital divulsion of the pylorus.

[1] Read before the Practitioners' Society, New York, May 3, 1889.

[1] In three pylorectomies in Billroth's clinic, in 1887, the diagnosis of cancer was made; cicatricial stenosis from ulcer was found.

[2] This case was under my care before examination of the gastric contents had been undertaken by me.

[3] THE MEDICAL RECORD, April 3, 1886.

[4] Ibid., April 3, 1886, and April 7, 1888.

[5] Ibid., June 2, 1888.

TABLE I.—*Examination of Gastric Contents withdrawn by Stomach-pump Four and a Half Hours after Test Meal.*

	May 26th.	May 27th.	May 28th.	May 29th.	May 30th.	May 31st.	June 1st.	June 2d.	June 3d.	June 8th.
Reaction	Acid.	Acid.	Acid.	Acid.	Acid.	Acid.	Acid.	Acid.	Acid.	Acid.
Lactic acid	Present.	Present.	Present.	Present.	Present.	Present.	Present.	Present.	Present.	Present.
H Cl	Present.	Present.	Present.	Present.	Present.	Present.	Present.	Present.	Present.	Present.
Total acidity	0.29 per cent.	.....	0.29 per cent.	0.21 per cent.	0.21 per cent.	.....	.....	0.22 per cent.	0.21 per cent.	0.25 per cent.
Total H Cl	0.146 per cent.	.....	0.16 per cent.	0.10 per cent.	0.116 per cent.	.....	.....	0.12 per cent.	0.117 per cent.	0.16 per cent.

The patient was transferred to the surgical wards on June 11th.

In conclusion, I desire to add a single word in regard to the present position of the question of the value of the presence or absence of hydrochloric acid in the gastric secretions, as a diagnostic sign of cancer of the stomach. The consensus of experience among clinical observers in various parts of the world is to the effect that free hydrochloric acid may be, and is, absent, temporarily or otherwise, in many gastric affections; that it is absent in a very large proportion of cases of cancer of the stomach; *that its continuous presence is a diagnostic sign of great value in excluding the probable existence of gastric cancer.* (F. P. K.)

June 11th.—The patient was prepared by emptying the bowels for two nights previous to the operation with enemata of soap-suds and castor-oil. At 12, 2, and 3 o'clock the stomach was washed out with warm water. Ether was administered at 3.30 P.M. No tumor could be felt. The incision was parallel to the border of the costal cartilages on the right side, five inches in length, extending from one and one-half inch below the ensiform appendix to the level of the tenth costal cartilage. In opening the abdomen the right and left lobes of the liver appeared, and in pressing them back with a sponge, the pylorus and duodenum were seen. In order to draw the pylorus into the wound the incision was lengthened one inch downward and outward. There were no adhesions, nor was the pylorus abnormally thickened, but at its junction with the gastro-hepatic omentum there was an area as large as the top of a lead pencil, where its peritoneal coat was thicker than normal and drawn into several stellate folds. After surrounding the pylorus with several sponges, an incision two inches long was made into the anterior wall of the stomach at a distance of two inches from the pyloric orifice. The edges of the wound required five or six cat gut ligatures. No fluid escaped from the stomach. Some time was spent in finding the pyloric orifice, on account of its small size. The lumen admitted a rubber urethral bougie of 20 French urethral scale, but it was thoroughly seen only after retracting the edges of the stomach-wound. Opposite the site of the stellate cicatrix before mentioned there was a small area of gray cicatricial tissue, chiefly on the upper wall, and half surrounding the lumen of the contracted orifice. This opening was then slowly dilated by introducing œsophageal and rectal bougies till No. 6 Wales rectal bougie had been passed, measuring one-third of an inch in diameter. The little finger, index, and middle fingers were introduced, and followed by rectal bougies up to No. 11, measuring a little over one inch in diameter. Then the two index-fingers were inserted and slowly separated till an interval of one-half inch existed at their tips. The walls of the pylorus were then quite flaccid, and its lumen about two inches in diameter. There was no tearing of the mucous membrane, and no noticeable bleeding; but there was so much resistance when this degree of dilatation was reached that I thought it not prudent to stretch further. A continuous catgut suture through mucous membrane and twenty silk Lembert sutures closed the stomach wound. No blood or gastric fluid had passed beyond the barrier of sponges. The line of sutures was dusted with iodoform, and the abdominal wound washed with boracic acid solution, and closed with catgut and two silver-wire relaxation sutures, over a small catgut drain between the peritoneum and muscles. Bichloride gauze dressing. The duration of the operation was two hours and ten minutes, and the patient's general condition underwent no perceptible change during its performance.

For the next forty-eight hours rectal nutrient enemata were given every six hours and retained. There was no pain, and no constitutional disturbance. On the third day ice, beef-tea, and milk were given frequently in small quantities by mouth. A large fecal movement was passed. On the sixth day chicken broth was given by mouth, and the dressing was removed and primary union without suppuration had occurred. On June 19th, the ninth day after operation, he was transferred to the medical wards. (W. T. B.)

On readmission to the medical wards the patient's general condition was excellent. Milk, the white of raw egg, and animal broths were digested without any sense of discomfort; there were voluntary movements of the bowels, and an increase in weight began almost immediately. On the 26th scraped meat was ordered, and on the 28th toast and lightly boiled eggs, and from this date the dietary was enlarged daily until the ordinary hospital diet was allowed.

Digestion was unattended with a single symptom of discomfort, and on July 31st the patient was discharged, apparently well, having gained fifteen pounds in weight from the date of the operation.

During the late summer, owing to imprudences in diet, there was a recurrence of some disturbance of digestion and he was readmitted to the hospital. A regulation of the diet, with the correction of constipation which existed, afforded relief, and since this date the patient, on an ordinary diet, has been quite free from his former symptoms, with the exception of a tendency to constipation. He finds, however, that he is obliged to exercise caution in the use of "sweets." His nutrition is satisfactory and his general condition excellent. A careful examination shows that the dilatation of the stomach has very sensibly decreased, the lower boundary reaching a point two inches below the umbilicus in the median line. The question arises, whether the continued dilatation results from a partial recontraction of the pyloric stricture, or is simply the result of the great distention of the stomach produced by the old and long-continued stenosis. The marked diminution in its size present eleven months after the operation, leads me to believe that the latter may be the correct explanation, and to hope for still further improvement. (F. P. K.)

At the time this patient presented himself for treatment Loreta's operation seemed to me to offer the best chance of relief or cure, with the least risk to life. All the data accessible to me were in favor of it; and several writers (Holmes, Smith, and McBurney) had expressed the opinion that it should have preference over other procedures. Up to 1886, pylorectomy in over 100 cases, 25 of which were for cicatricial stenosis, had a mortality of fifty per cent. for these and seventy-five per cent. for cancerous strictures; gastro-enterostomy had been followed by almost as bad results, and duodenostomy had resulted fatally in three instances (Winslow: *American Journal of the Medical Sciences*, April, 1885). This man's rapid recovery without the slightest accident, and his present good condition, eleven months after operation, are valuable evidence in favor of this procedure. But we need more cases before we can assign it its proper place. A careful search by Dr. T. C. Hasson has brought to light nineteen other operations, which I present to you in tabular form, and regretting that I cannot give fuller details of many of them (Table II.).

TABLE II.—*Table of Cases of Digital Divulsion of the Pylorus.*

No.	Operator.	Date of operation.	Sex and age.	General health and duration of symptoms.	Results.	Remarks.	Reference.
1	Loreta	Bologna, September 14, 1882.	M., 47..	Suffered for twenty years; pain in stomach, vomiting, vomited matter sometimes contained blood; emaciation.	Cured		Loreta, Divulsione digitale de puloro. 2d edition, p. 64. Bologna, Fratelli Frères, publishers.
2	Loreta	December 22, 1882...	M., 18..	Suffered for seven years; feeling of weight in epigastric region, vomited daily, vomited blood several times.	Cured		Idem.
3	Mario Giommi..	February, 1883.....	F., ?...	?...	Died		Quoted by Loreta.
4	Cattini	Florence.....	F., 30..	Suffered for three years with symptoms of stenosis.	Cured		Idem.
5	Loreta	March 17, 1883.....	M., 46..	Suffered seventeen years; chronic gastritis; bloody vomiting.	Died	Collapse	Quoted from Winslow. American Journal of the Medical Sciences, April, 1885.
6	Loreta	July 15, 1883.....	M.....	Suffered three years; daily vomiting; gradual starvation.	Cured		Idem.
7	Frattini	Venice, June 9, 1884.	? ?...	Symptoms not given.....	Cured		Quoted by Holmes in British Med. Jour., 1885, vol. i., p. 375.
8	McBurney.....	New York, July 6, 1885.	F., 39..	Attacks of vomiting for nineteen years; within one year daily vomiting; pain in epigastrium; no blood vomited; physical signs of extreme dilatation of stomach.	Died in six hours..	Stomach found filled with blood. Blood in duodenum and small intestines. Tear in mucous membrane of pylorus.	Annals of Surgery, 1886, p. 372 et seq.
9	McBurney.....	New York, July 6, 1885.	F., 52..	Symptoms of ulcer twenty years previous; present symptoms for eighteen months; much emaciation; severe abdominal pains; vomits daily; sometimes vomits blood; physical signs of great dilatation of stomach.	Died in thirty hours from suppression of urine.	At autopsy advanced Bright's disease found, also ulcer of pylorus.	Idem.
10	Molière	Lyons, 1886.....	F., 47..	Suffered for one year; pain in epigastric region; loss of appetite, vomiting, no blood vomited; large tumor in region of umbilicus, three months' standing.	Died on eighteenth day from exhaustion, without having vomited once.	The case was diagnosed as cancer, and proved so at autopsy. Was thought that operation would give patient relief.	Reported by Bertoye in Lyon Medical, 1886, vol. lii.
11	Haggard	Hull, March, 1886...	F., 51..	Symptoms of gastric disturbance for five years; stomach dilated; vomited daily, though no blood.	Cured	Stomach still dilated at last reports.	British Medical Journal, February 19, 1887.
12	J. M. Barton ...	Philadelphia, May 22, 1887.	M., 58..	Symptoms of pyloric obstruction one year duration; no vomiting of blood; much exhaustion	Died on fourth day from exhaustion.	Dr. Barton says patient was operated on too late.	Philadelphia Medical Times, 1887–88.
13	Loreta	Bologna, September 14, 1887	F., 47..	Loss of appetite eight years previous, after an attack of typhoid fever; since one year pain in epigastric region; vomiting, constipation.	Died on fifth day; tetanus.	Patient had opisthotonos for several hours before death. No autopsy.	Gazetta degli Ospitali, 1887, Nos. 101.
14	Loreta	October 13, 1887....	F., 31..	Five years dyspeptic symptoms; constipation for one year; pain in stomach, and vomiting after meals.	Cured		Gazetta degli Ospitali, 1887, No. 101.
15	Loreta	October 31, 1887.....	M., 34..	For twelve years pain after meals, and regurgitation of food; vomits now without pain..	Cured		Idem.
16	Brichetti	Bologna, December 19, 1887.	M., 24 .	No history given	Patient doing well on sixth day.		Gazetta degli Ospitali, December 25, 1887.
17	Loreta	January 30, 1888....	M., 54..	Dyspeptic symptoms for ten years; since one year vomited after each meal; much pain; loss of weight.	Improved	Gained weight for some months, but symptoms returned.	Gazetta degli Ospitali, September, 1888.
18	Loreta	June 20, 1888.....	Above mentioned patient.	Symptoms returned two months after operation, but not so severe.	Cured	Patient left hospital two months later perfectly well.	Gazetta degli Ospitali, September, 1888.
19	Loreta	July 12, 1888	F., 22..	Gastric trouble for five years; pain after meals; vomited for only four months; no blood.	Cured	Duodenum and pylorus found adherent to liver. Adhesions tied off.	Reported by Codarilla in Gazetta degli Ospitali, September 16, 1888.
20	Bull	June 11, 1888.....	M., 38..	For twenty months pain in stomach; daily vomiting; constipation; marked dilatation of stomach.	Cured		Details in paper preceding.

Of the twenty cases here presented two should be excluded, one because the condition was carcinoma, the other because it was reported on the sixth day. This leaves eighteen operations, with twelve recoveries and six deaths, a mortality of 33.3 per cent. The causes of death are hemorrhage into stomach after operation, renal disease, exhaustion, tetanus, collapse, one each, and in one case it is not given. Of these the first is the only one inherent to the operation itself, and suggests the necessity of great caution in stretching the narrowed orifice. (In my own case I took care to do this very slowly, consuming fifteen or twenty minutes in this stage of the operation.)

A question that naturally arises is, whether the overstretching of this cicatrix will be followed by recontraction. It is unfortunate that the published records give us no information except in one instance (Case 17), where the operation was followed after two months by return of symptoms caused by recontraction. Professor Loreta himself has kindly written me that he has observed this in three instances, one of which is doubtless the case referred to. His letter bears on other points of interest, and therefore I present it in full. It is dated Bologna, February 20, 1889, and is translated by Dr. G. G. Van Schaick as follows:

"I cannot tell you the exact number of patients operated on by me by divulsion of the pylorus, because, unfortunately, a good part of the notes I had taken to serve for the statistics of this operation have been lost.

"The last 7 patients which I operated on, in 1887 and 1888, gave a result of 5 cures and 2 deaths. Of the two that died, one did so from hemorrhage; the blood flowed from the edges of the gastric incision for the reason that the suture was not sufficiently tight to serve as a hæmostatic. The other died of peritonitis, the peritoneum having been lacerated at a point of the dilated ring without my having noticed it.

"I saw relapses of the contracture three times in other cases; of which two were in women and one in a man. I have noticed that the return of the contracture and of the symptoms due to it have always shown themselves a short time after the operation, or about two or three weeks after, as a rule, and this occurred every time that the dilating force had not completely paralyzed the cicatricial tissue, and hence had not brought about its immediate adipose degeneration. Of these three cases two underwent an operation for the second time, with permanent benefit.

"In the few patients that I have been able to observe some months or years after the operation, I have been able to establish the fact that, as it resumed its normal function, the stomach became a great deal smaller."

The foregoing facts will be of some use in enabling us to give to Loreta's operation its proper status as com-

pared with other procedures. It has certainly had a greater mortality than has hitherto been supposed. There is shown to be danger of hemorrhage from tearing the mucous membrane in dilating the orifice, and of peritonitis from tearing through the peritoneal coat. It is evidently a procedure that must be gradually. even if forcibly, performed in order to avoid these accidents. It is uncertain or unknown in what proportion of cases recontraction will follow. There are the same sources of failure due to the patient's exhausted condition, or the existence of other visceral disease that attend other abdominal operations. But with all these risks and uncertainties, it is certainly to be preferred to pylorectomy. This is the most perfect operative procedure, but it is as yet too dangerous. Gastro-enterostomy, or the formation of an anastomosis between the stomach and upper jejunum, bids fair to show better results than hitherto, since the improvements in technique afforded by Sena's plates and Abbé's catgut rings have been adopted satisfactorily. It may yet be shown to be the safest procedure. Another method is in its infancy, and yet seems worthy of trial. It is called "pyloroplasty" by Mickulicz, who describes it in the *Archiv. für Klin. Chirurgie*, vol. xxvii., page 79. He reports a case, which ended, however, fatally, fifty hours after operation, from exhaustion and beginning peritonitis. Here the stenosis was accompanied by an ulcer, the bleeding from which was the chief indication for operation. The pylorus was laid open by a longitudinal incision, the ulcer cauterized, and the incision united with sutures in a transverse direction. This gave to the orifice, which, when opened, was contracted so as to admit only a dressing-forceps, a lumen which admitted the index-finger readily. The operation was performed in February, 1887. Eleven months before this, Heincke, as narrated by Mickulicz, had performed a similar operation and with success. Four months and a half after the operation the functions of the stomach were well performed, the patient had gained greatly in weight, and the dilatation had diminished. (W. T. B.)

THE COST OF YELLOW FEVER EPIDEMICS—THE EPIDEMIC AT DECATUR, ALA., IN 1888,[1]

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YELLOW FEVER is an American disease. It is claimed that it originated on the west coast of Africa, but whether this be true or not, it is now, like the negro, thoroughly at home on the Western Continent. Its habitat is the eastern coast of the Spanish Americas, between about the 23° north, and the 20° south, latitude. From these regions it may and does, under favorable conditions, extend to the countries to the north and south.

The United States has suffered more by far, in modern times, from this pestilence than any other country, hence there are good reasons why physicians and sanitarians of this country should study this disease. There is a particular reason why our attention should be turned to it at the present time, because of the severe epidemic in Florida that has so recently attracted the attention of the civilized world, and drawn from all sections of this country sympathy and aid.

Of yet more importance is the fact that the coming season may witness a far more disastrous epidemic than that of the past, for there are those that assert, and not without reason, that the wave of this disease that extended over Florida last season, and sent a ripple into North Alabama, may, the coming summer, spread over a large area of the country, and be as severe as the famous epidemic of 1878. It is important, then, that steps be taken while there is time to meet this threatened danger.

The present paper is based upon observations made during a personal experience with this pestilence last season, and upon the subsequent study of the history of the fever as it has appeared in the United States and Europe at different times in the past.

Before entering upon the history of the epidemic I witnessed at Decatur, Ala., let me speak briefly upon the vast losses that are occasioned by yellow fever epidemics.

The loss of life, if the epidemic be at all general in character, is simply appalling. Thus in the epidemic of 1878, which was confined for the most part to three sparsely settled States—namely, Mississippi, Louisiana, and Tennessee, whose combined population was less than that of New York City—there were some one hundred and eighty thousand cases of the disease, and over twenty thousand deaths. This great calamity occurred in the space of about nine weeks. The loss of life was not distributed uniformly over the area of the three States mentioned, but was most marked in certain sections, where, indeed, the pestilence ceased only when all subjects were exhausted, as a fire dies out for want of fuel. Thus in Memphis, where some nineteen thousand people remained in the city, there were five thousand one hundred and fifty deaths, and seventeen thousand six hundred cases of the disease altogether. Sixty per cent. of the white people in the city died. Smaller communities, such as Holly Springs, Grenada, Greenville, and other places, suffered as greatly in proportion.

Norfolk, in the epidemic of 1855, had over ten thousand cases of the fever; more than fifty per cent. of the population remaining in the city died. Other sections of the country, besides the South, have suffered from this disease, and other countries as well. Thus Philadelphia, then a small city of some fifty thousand inhabitants, lost ten thousand and thirty-eight of her citizens from yellow fever, from the three epidemics that occurred between the years 1793 and 1800, a period of seven years. The province of Andalusia, in Spain, in the year 1800, had sixty-one thousand deaths from this disease. The city of New York, and many of the New England cities, have suffered time and again from this pestilence.

When we come to consider the pecuniary loss occasioned by yellow fever it is difficult to get accurate figures, but the "Annual Encyclopædia" for 1878 estimates the loss to the South from the pestilence of that year as exceeding two hundred million dollars. This, of course, includes losses from the prostration of business, depreciation of the values in property, etc.

The epidemic of the year just passed has been very limited in character, but has disturbed business over a very large section of the South, and thus caused great loss. One of the modern phases of yellow fever is that the outbreak, even though very local in character, causes widespread panic, and the establishment of quarantines that disturb trade and commerce very seriously. Thus the announcement of one or two cases of the disease in the little city of Decatur, in North Alabama, and the discovery of one or two suspicious cases in Jackson, Miss., threw the inhabitants of several neighboring States into a panic that was almost hysterical in character. It is estimated that fifty thousand people fled from their homes to the North through fear of the disease and the quarantines.

The Relief Association, at Jacksonville alone, last season spent nearly a half million dollars. All but a very small part of this sum was contributed by the charitably inclined throughout the country and the General Government.

Great as have been the losses in this country in the past from this disease, the losses in the future, if an epidemic shall become again general in character, will be enormously greater. This will arise from the developments that are taking place so rapidly in the South. How great this development has been may be estimated from the single item of railroad growth in this section during the last decade. It is estimated that seven hundred million dollars have been invested in railroads since the epi-

[1] Read before the Public Health Section of New York Academy, March 1, 1889.

demic of 1878. Progress in other lines has kept pace with this branch. The South has entered upon a period of rapid industrial growth that gives rise to the development of cities and villages.

Now, it is well known that yellow fever is an urban disease, prevailing almost exclusively in cities and villages. The developments in the South have been so extensive in the last five years that it would be a moderate estimate to say that an epidemic the coming season, no more extended than that of eleven years ago, would cause the loss of five hundred million dollars and not far short of fifty thousand lives.

Strangely enough, these Southern developments, in a certain section, have greatly increased the dangers of yellow-fever invasions of this country. I refer to the opening up and growth in population in Southern Florida. It cannot escape the observer that the climate and general conditions in Southern Florida are not essentially different from those in Cuba, where the disease is ever present. Hence there seems to be no reason in the nature of things why this disease may not become endemic in the former locality as it is in the West Indies to-day. This region, Southern Florida, it is claimed, is perpetually below the frost line, the only agent that is known to destroy the germs of the disease, and hence here will be an excellent winter home for consumptives and yellow-fever microbes. From this section the disease will be ready to follow the lines of travel, in the spring and summer, into the States north and west of Florida. That this danger is not an imaginary one, may be known from the fact that it was in this region the disease wintered in 1887, and from here extended to North Florida and Alabama.

From the foregoing a faint estimate of the losses to life and property from yellow fever may be obtained and the importance of the subject under consideration estimated.

It would seem that, with a danger such as this hanging over the country, not physicians and sanitarians alone, but the press and the public would awake to the momentousness of the subject, and that Congress could be induced to appropriate a small portion of the surplus millions in the Treasury to meet this danger.

Great as is the calamity from an epidemic of this kind it is not one of those mysterious visitations of Providence, like an earthquake for instance, that cannot be guarded against. It is rather a scourge that visits the human race, especially in this country, as a punishment for broken sanitary laws. There is no epidemic disease that can be more easily prevented, and none more readily stamped out than yellow fever. Spain is no longer ravaged with this disease, owing to proper quarantine regulations; and there is now little fear that Philadelphia will again lose one-fourth of her population, as she did in the past, from this pestilence, because she now has better sanitary laws.

Having thus touched upon the great losses occasioned by the disease under consideration, we come to the second part of our subject—a brief history of the epidemic at Decatur, Ala., during the season just passed.

It is nearly impossible to devise practical means to prevent or stamp out a yellow-fever epidemic without having had a personal experience with the disease. One soon sees that we have not only to manage an epidemic disease as it manifests itself in a community, but deal with a community struggling with an epidemic. In other words, we have to deal with the passions of fear, greed, and a sort of fatalism, in a people ravaged by a pestilence, as well as with the disease itself. My meaning will appear in the following history, where I have dwelt, not upon the dramatic or pathetic features of the epidemic, but upon those that illustrate the origin and spread of the disease.

It is of interest, first, to trace the steps by which the fever found its way from its home in Havana, Cuba, to a little city in north Alabama.

Early in 1887 a family moved from Havana to Key West, Fla. As the regular line of steamers would not transport household goods at that time of the year, on account of the fever in Havana, the family took passage on the "tramp" steamer Cochran, and landed their infected baggage in the city. The result was a severe epidemic in Key West. All the towns in Florida quarantined against Key West, Tampa among the others. In the latter city were a family of Italian fruit-dealers, named Turk, who at once began to smuggle fruit from Key West to Tampa. On one of their expeditions they brought in a few wollen blankets, and with them, of course, the germs of the dreaded disease.

Tampa thus had its epidemic. It commenced at the house of the smugglers. Quarantine was declared against Tampa, and the Government Marine Hospital officers were sent down to assist the County Health Board in maintaining strict quarantine. The Health Board raised the quarantine early in December, in deference to popular clamor, although the disease still existed at Tampa. The result was that the fever spread to Plant City and Manatee, and thus as early as February reached Jacksonville. Here it ran a mild course in the cool weather of the early spring and summer under the name of "society fever." It was not until August that the authorities there would admit that yellow fever was in the city.

In fact, several prominent property-holders will not admit yet that the disease has been there. On the 14th of August a man named Livingstone packed his carpet-bag with infected clothing, and, with a liberal supply of the germs in his system, started for Decatur, Ala., where he had an acquaintance.

With but little difficulty he passed the quarantine stations, and the inspection of the numerous quarantine officers stationed at the different towns. At one place he was put off the cars, but he drove across country to another station and continued his journey without further hinderance. To be sure, he had to resort to falsehoods, and the tricks that refugees commonly employ; but on the 17th he reached Decatur with his yellow-fever germs. The following day he had the symptoms that herald an attack of the fever. It was an exceptionally mild case, such as prevailed at Jacksonville, and he did not take to bed with it. It will be noticed later that the type of the epidemic he gave rise to at Decatur was not a mild one, but, on the contrary, exceedingly malignant.

Two days after his arrival the city authorities ordered him to leave town. He did so, protesting to the last that he had not been at Jacksonville within three weeks, and that he was now in perfect health. He has but lately furnished the above particulars to Dr. Wall, of Tampa.

From Decatur the refugee, still with the fever upon him, went to Florence, Ala., then to Memphis, and at last to Hot Springs, Ark. He thus spread the germs of the fever over a large area of country, but at no place, except Decatur, did the seeds happen to fall upon suitable soil. The conditions at Decatur were peculiar. The Spencer House, where the refugee lodged, had been closed all summer, and the house was damp and musty; again, there had been an unusual amount of rain and excessive heat during the summer; then, too, this being a "booming town," there had been much stirring of the soil in grading streets in the neighborhood of the Spencer House.

Thus the conditions for the growth and multiplication of yellow-fever microbes were all present, especially as there was then no sewerage system at this house, and the ground was of necessity saturated with human excreta. It is very possible that there was not another house in the city where the germs would have developed so as to cause an epidemic.

About twenty days after the expulsion of the refugee his host, Spencer, took sick. All thoughts of the refugee and fears of the fever from him had long been laid aside; this case was thought to be a "remittent fever" and the patient was treated accordingly. Not a suspicion of the true state of the case crossed the attending physician's mind, at least until the last day of his patient's life, when symptoms of "black vomit" appeared. Then the local

health officer was called in. Meantime the public was in blissful ignorance of there being a suspicious case in the city until it was aroused the same day by a rather dramatic incident. Spencer lived on the main business street of the town, and just before dark, while the streets were full of people and the patient was alone with his wife, he went into violent convulsions. The faithful wife in her fright ran out on the veranda and screamed for help. Help came in the shape of every man and boy in the vicinity, and in a moment or two the house and front yard were well filled with spectators. While some were holding the struggling man the "black vomit" began again, and a physician, who had dropped in among the others, remarked "That looks like yellow fever." The volunteers, or the most of them, left the place quite as quickly as they had assembled, and in a very short time it was known throughout the city that there was a possible case of yellow fever in town and great excitement ensued. Some of the more timid left the city that night.

This seemingly trivial incident is of much importance in its bearing on the epidemic at Decatur, for the reason that it drew wide-spread public attention and alarm to the first case of the disease. A strong light was turned upon the epidemic at the outset, which should have brought about measures to strangle it at its birth. It is the usual history of these epidemics that the advent is so insidious that a number of cases—from five to twenty—have developed and been treated for remittent, or bilious, or congestive, or "prevailing," or "society" fever, before it is discovered that the disease is the dread "yellow jack." By the time this discovery is made the infection has extended over quite a space. But at Decatur this was not the case—the death-rate for fifteen days prior to Spencer's death and the amount of sickness had been unusually low, much less than during the preceding part of the summer, and there was absolutely no reason for supposing that Spencer's case was not the first case of yellow fever in the community. Could there have been a more favorable opportunity for stamping out an epidemic at its very birth than this, if the proper steps could have been promptly taken? Another fact that this case should have shown was, that there was now an "infected centre" at Spencer's house. Had he developed the disease within five days of the departure of the refugee it might have been thought that Spencer had contracted the disease from his friend's baggage direct, and that the germs had not obtained a foothold yet in the town. But the Spencer case, occurring twenty days after the visit, proved beyond a doubt that the seeds of the disease had been brought there, planted, found congenial soil, multiplied, and now were bearing their legitimate fruit. There could be no question, then, that if Spencer's case was yellow fever, Spencer's house, and the premises all about it, were badly infected and was the breeding-place of the disease from which it might extend over the community.

Now let us see what followed the discovery of this first case of the fever. The Local Health Officer very properly telegraphed the State Health Officer, and the latter reached Decatur the next day. Meantime Spencer had died, in fact he never came out of his convulsions.

With the State Health Officer came three physicians from the towns adjacent to Decatur. No one of the physicians, except the State Health Officer, could be at all considered as an expert in yellow-fever cases. An autopsy was held, and the result of the autopsy was that the four physicians that did not live at Decatur voted the case to be yellow fever; but of the ten Decatur physicians nine voted that it was not yellow fever, and one was non-committal. Thus the first step taken toward stamping out the disease was a controversy as to whether or not the disease was present. The town was divided into two hostile camps and all action was paralyzed. Those of the citizens who believed that the outside physicians might be right in their conjecture left the town in a panic that alarmed all the country around. It was estimated that three thousand people fled from the town in the next thirty-six hours. The refugees crowded the cars as fast as they could be brought in; they clung on the platforms, climbed on the roofs, and swarmed into the baggage cars. Freight trains had to be pressed into service, and delicate ladies were seen crowded upon open cars with their children and goods about them. Hundreds of families streamed out into the country on every form of vehicle that could carry a family and cooking utensils, and there took possession of all empty houses, log-cabins, and unused gin-houses that could be hired.

This left in town only those who asserted in emphatic language that there was no yellow fever there, nor had there been any, and that those who maintained that there was were no better than they should be. In fact, a mass-meeting was held five days after Spencer's death, presided over by leading citizens, at which resolutions to the above effect were passed and published far and wide.

These matters are mentioned here, not to cast discredit or ridicule upon those physicians or citizens of Decatur who stood out against the possibility of yellow fever being present. These men were earnest and conscientious in their beliefs, and when at length their mistake was apparent, came forward manfully and acknowledged it, and fought the epidemic like heroes. Decatur was not peculiar in this matter of refusing to believe she had yellow fever in her midst. Every community, almost without exception, has been equally vehement in its denials at the outset of the disease.

These matters are mentioned to show that, in order to deal successfully with an epidemic of this kind, we have to deal with human nature as well as with the scourge. Now no fact about human nature is better known than that we are loath to accept views that are contrary to our wishes. The human mind sees plainly, and with full force, the arguments that agree with its views and desires, but not so plainly those that are disagreeable and disturbing. It is small wonder, then, that the citizens of Decatur refused to accept the dicta of three or four physicians from neighboring towns in a matter that would cause the loss of hundreds of thousands of dollars from mere fright, panic, and quarantine, when their own physicians, almost to a man, took the opposite view.

And as for the local physicians, was there no good reason for their declining to adopt the view of the State Health Officer in this case? Let it be remembered that yellow fever is not a disease easy to diagnose at the outbreak of an epidemic; that at the epidemic on Governor's Island, for instance, in New York harbor, there had been *seventeen* cases of the disease before it was believed to be yellow fever; that the same is true of the beginning of al most every epidemic of this disease; that there is nothing absolutely characteristic of the disease revealed by an autopsy, except, possibly, to experts. Now, under the circumstances, with but a single case to judge from, can it be wondered at that the local physicians hesitated to give in their adhesion to views which, if erroneous, would cause them to be denounced by the community as fools and frauds?

These are some of the difficulties that will forever stand in the way of cities, or even States, dealing promptly and vigorously with a yellow-fever epidemic, so as to check it at the outset. Such questions can be handled properly only when all the authority and means of the General Government are brought to bear upon them. Had a board of Government experts been called in to investigate the Spencer case, they having abundant means and great prestige, can there be a doubt that the community that rejected the dicta of physicians from neighboring towns would have accepted the views of the Government experts, and that the Decatur epidemic would have been a thing that might have been, but was not?

Meantime, while this controversy had been in progress, the enemy had been entrenching himself in the community.

The second death from the fever was a man named Pogue, who had left Decatur in apparent health just after

Spencer had become sick, had gone to western North Carolina, and had there died of "black vomit" the day after Spencer died in Decatur. This man had been in and about the Spencer house very freely. His case was not known at Decatur until sometime later. The third case was a telegraph operator, who lived about two hundred feet west of the Spencer house. He died five days after Spencer, but he was not thought to have had the fever, but some form of kidney disease. He had a public funeral, attended by the members of the beneficiary order to which he belonged.

Meantime the physician who had attended Spencer, living about two hundred feet northwest from him; the neighbor woman who had helped to nurse Spencer, living opposite; a young man living on the corner of the next block east, and one or two others in the immediate vicinity of Spencer's house were sick, but none were thought to have yellow fever. There were thus cases on three sides of Spencer's house. This was the state of affairs when I reached the town, six days after Spencer's death. I was not an expert, had little but a theoretical knowledge of the disease, but went there to look after certain interests of my own, and to offer my services if they should be needed.

With the consent of the physicians I examined all the sick, principally for my own satisfaction. There was one, at least, that was a typical yellow-fever case, that of the physician who had attended Spencer. Not a single symptom of the disease was lacking. He was being treated, however, for "rheumatoid fever." Other cases were very suspicious, and, on the whole, taking all the circumstances into consideration, there could be no question that an epidemic was at hand. At my suggestion the physicians held a meeting to talk over the matter, and all but one were now willing to admit the facts.

Had anyone with authority and means been present now, this being the eighth day since Spencer's death, the epidemic might have been easily stamped out. All opposition on the part of the local physicians and the citizens was withdrawn (indeed most of the people now left the city on special locked trains run North). The infection had not extended more than three hundred feet in any direction from the original centre, and it would not have been a difficult matter to confine it there, and thus have brought the epidemic to a close within two weeks, with the loss of not more than two or three lives. How this could have been done will appear later. That it was not done is evident enough. The local officials seemed waiting for the State Health Officer to do something or make some suggestion. The State official, either mindful of the abuse heaped upon him a few days before, or doubtful whether he had the authority or could command the means, made no vigorous moves. Thus the enemy was practically undisturbed, and an epidemic that cost many lives and caused enormous loss ran its course.

I have said that all the cases were yet within three hundred feet of the starting-point, showing that but a small area was infected. There was a single exception to this statement, and, like exceptions, served to prove the rule that there is usually but one infected centre. One man named Falkenburgh, living some four blocks from the Spencer house was sick, but was not, when I saw him, a typical case of the disease. He had been much in the neighborhood of the Spencer house after the latter's death, and had been most outspoken against the disease being yellow fever. He undoubtedly contracted the disease there. He was sick, and died in his own house four blocks away, but there is no evidence that a single person took the disease from him or his premises. His house was not in the infected district, did not become infected by his sickness and death there, and it was several weeks before the infection, travelling slowly from house to house from the centre, reached that neighborhood. Even then it reached the vicinity in a roundabout course, coming in from the rear rather than moving in a direct line along Bank Street.

The epidemic now followed the usual course. Every day the area of infection was a little more extended, but for some time confining itself mostly to two streets running east and west, Lafayette and Vine, and to the cross streets opening into these. Cases would appear in different parts of the city, off the line, but they were always found to be people who had been in the infected area nursing, or as night watchmen and policemen, or quite often colored people who had taken home the clothes of the sick to wash them.

The nurses were allowed to mingle freely with the citizens in the uninfected part of the town, and many of the attendants developed the disease and were sick away from the infected portion of the city; but I did not observe that any new centres of infection were set up from these cases. On the contrary, the infection seemed to spread from the original centre only, much as oil dropped on water continually enlarges its area. The progress of the infection was slow, not averaging more than fifty feet per day in its rate of travel.

This is the average rate of the spread of yellow fever infection. It does not fly through the air from point to point, but slowly creeps along the surface of the ground from house to house, and may often be turned aside by an obstruction, such as a board fence, as was the case at Mobile, or a high bank, as at Memphis. At Norfolk it took the infection more than two months to travel across the city, a distance of a mile and a half. In the New York epidemic of 1822, commencing at the foot of Rector Street, the infection only averaged thirty feet per day in its spread.

The spread at Decatur was not uniform in all directions, for here and there a small district would be unaffected for a time. The disease never, however, reached the new part of the town which surrounds the old town on three sides. The reason for this is obvious. Between the old and the new parts there is a broad space of ground, from a quarter to half a mile in width, that is not built upon. There being few or no houses over this space, no sewers, or outhouses, or human excreta and filth in the soil to make a suitable nidus for the germs, they could not spread over this barrier. On the outer sides of this space were stationed guards, that to a certain extent limited the intercourse between the new and the old parts of the city. Thus the transportation of infected baggage and clothing was prevented. By these means, principally by the former, the disease, except in two or three instances, was confined to the old town. In the three instances mentioned, the disease was contracted by the parties working in the infected district.

The physicians suffered from the disease among the first, and were sorely afflicted. They were, of course, in the infected district during the day, and most of them slept in the midst of it at night. The result was that in three weeks seven of the ten were down with the disease, and four of them were dead. Before the epidemic closed the rest of those who remained day and night in the infected district, with the exception of one who had previously had an attack, came down with the disease. Of the nine affected five died. The mortality among them was thus as great as among the volunteer physicians at Memphis in 1878.

I know not where in the records of history a more heroic spirit was ever displayed than by the physicians who remained to fight the disease at Decatur. They quietly made their preparations for the worst that can happen to mortal man, and then went as cheerfully about their work as if engaged in duties devoid of all personal danger. As one after another succumbed to the disease and laid down his work the survivors took up the burden of the fallen comrade and went calmly on without fear or hesitation. Need it be said in addition that these gentlemen were serving without hope of pay or fame, content to tread the path of simple duty though it led straight down into the valley of death. The words of praise bestowed upon the physicians of the infected district of Decatur might with equal justice be applied to many more heroic

souls there; those, too, in all professions and walks of life.

I can speak thus freely of the merits and devotion of the physicians of Decatur because I was an outsider; only taking part as the others gave out.

The mortality at Decatur among the sick was very high, especially in the first part of the epidemic. It averaged, for a time, among all classes, about fifty per cent., but later the death-rate fell, so that the general average was about thirty per cent. Of course it was very much higher in the white race than in the colored. The latter race seems nearly as susceptible to the infection as do the whites, but the disease is not nearly so fatal among them. The rate of mortality at Decatur was markedly in excess of that at Jacksonville, it will be noticed. At the latter place the death-rate was less than ten per cent. At Memphis, in 1878, the general rate of mortality was thirty-nine per cent., but among the whites alone it was seventy per cent., while among the colored only eight per cent.

The influence of frost in checking the disease was very marked. The first considerable white frost nearly exterminated the germs, or at least it checked their activity. This was followed by a period of warm, muggy weather, when the disease became again active. Indeed it required quite a hard freeze to finally put an end to the epidemic.

Sunlight direct, and moving currents of air likewise lessen the activity of the yellow-fever germs. Thus there seemed to be but little danger for anyone to enter the infected district for a few hours in the middle of sunny days. The danger was much increased in dark, muggy, or rainy days, and at night the danger was very great. Nearly, if not all, the night-watchmen and policemen in the infected district came down, often after a very short exposure.

Two facts of immense importance were clear to my mind from a study of the epidemic at Decatur. These observations are not new, they are recognized by all who have made a study of these epidemics, and yet the medical profession, for the most part, and notably the public at large, seem ignorant of them.

A knowledge of these two facts, however, will enable us to stamp out at the outset any yellow-fever epidemic that may appear in this country.

1. Yellow fever is not a contagious disease; that is, it cannot ordinarily be communicated from person to person as is the case, for instance, with small-pox.

2. It is a highly infectious disease; that is, the place, the locality where the germs are growing and multiplying, is exceedingly dangerous.

Remove the yellow-fever patient from the infected district, and he is as harmless to those about him as if he had nothing more dangerous than a broken arm.

The "infected district," though every case of fever may have been removed, is none the less dangerous to those entering it.

Let me mention a few facts to show that the disease is not contagious when ordinary cleanliness is observed in the care of the patient.

No less than twelve of the Decatur refugees came down with the fever after leaving the infected district, some of them in towns and villages but a few miles distant. These people were attended and cared for by unprotected nurses and physicians, but no one took the disease from them.

The report of the epidemic at Norfolk, in 1855, says: "In no case that we have known or heard of was there the least reason to suspect that the disease was contagious. Many hundreds of our people, flying from the pestilence, sickened and died in the neighboring towns and cities under all possible varieties of place and circumstance, and yet we have not heard of a single instance in which it was even alleged that the disease was communicated to the attendants and friends.

In "Camp Joe Williams," at Memphis, in 1878, unprotected nurses in the camp hospital were in contact with yellow fever cases for seventy-two days in succession, and yet none of them took the disease. In the same camp, people came out from the infected district in the city with the germs of the disease in their systems, came down with it, were cared for in little army tents by friends and relatives who slept in the same little room, and yet not a person there contracted the disease.

When the epidemic raged on Governor's Island, in New York harbor, five hundred cases of the disease were taken to Quarantine Island down the harbor, and were there attended by unacclimated physicians and nurses, and no one took the disease.

The superintendent of Quarantine Island and his family were also present, and as safe as if in Greenland.

In Gibraltar, in 1854, four thousand people left the infected district, taking their sick with them, and went into camp. There was no spread of the disease from the sick in the camp.

At Jacksonville, during the late epidemic, the nurses that went from the North to the Quarantine Hospital outside the infected city did not contract the disease. Those who went into the city did not escape.

I have yet to see or read of a single case of yellow fever that could be traced to direct contagion as a cause; while innumerable cases of long-continued contact with the sick, where the disease was not contracted, can be given.

The second important fact about yellow fever that, when appreciated, will enable us to control the pestilence is, as I have said, that practically all danger is in the infected district. This fact cannot be made too prominent.

To illustrate, let us study a few data. At Decatur those who came in contact with the sick, but did not remain in the infected district at night, or for many hours at a time, did not contract the disease. At Memphis, in 1878, the physicians who went into the hospital camp outside the city did not get the fever, but of the fifty-four physicians who volunteered to go into the city, fifty-three had the fever and thirty-three of the number died. But here is a still more striking fact, that has, in truth, the completeness of a test-experiment. At "Camp Joe Williams," outside of the limits of the city some miles, there were nine nurses taking care of the yellow-fever cases that developed in the refugee camp. After nursing for a length of time there in safety, and thus thinking themselves proof against the disease, five of the nine nurses determined to go into the city to nurse, as they could there get better wages. The five went into the city, remained a few days, and returned to camp. All five immediately came down with the fever and died. Their companion nurses who nursed them and others, and were, as I have said, in contact with the disease seventy-two days in succession, but kept out of the city, escaped the disease altogether.

Dr. Mitchell estimated that as much as ninety-nine per cent. of all the people who remained in the worst infected district in Memphis had the disease before the epidemic closed. In the less infected districts he thought eighty-six per cent. of the people developed the disease.

Only seven miles away, in camp, the same classes of people suffered not at all from the disease, except those who, in despite of all warnings, ventured down into the city for a day or two.

During the epidemic at Cadiz, Spain, in the year 1800, it is estimated that 57,400 people were in the city during the epidemic, and that 48,500 of them had the fever.

In Xeres, the same year, some 33,000 remained during the epidemic, and there were 30,000 cases of the fever. There were 13,000 deaths. Seville suffered at the same time, and 74,000 of its 80,568 inhabitants had the disease.

In Malaga only 7,000 of its 110,000 inhabitants escaped an attack.

In many of the cities of Mississippi, during the 1878 epidemic, it is thought that not a single white person in the infected districts who had not previously had the fever escaped it.

At Jacksonville, Fla., last season, there was reported to be only about 10,000 people in the city, and there were more than 10,000 cases of the fever reported before the epidemic closed.

Are more facts needed to prove that the infected district is the danger-point in a yellow-fever epidemic, and that all, or nearly all, who remain in it are destined to have the disease, if not protected by a previous attack.

This being the case, we can but see that the prime thing, the only thing to do, is to get the well people out of the "infected district," whether it be large or small, as soon as possible. When this is done the worst epidemic must end in not more than three weeks at the outside.

It is said, and with truth, that many of the citizens of an infected district will refuse to leave their homes to go into the camps that may be provided for them.

This is true, and yet we may ask, What moral right they have to prolong an epidemic for months perhaps, by refusing to adopt the only course that can put an end to it?

Even had the community the right to commit suicide in this manner, they ought not to be permitted to destroy the business and imperil the lives over a large section of country, as they must do, by continuing an epidemic.

We might inquire of the nineteen thousand people who remained in Memphis during the great epidemic: "Had you a moral right to remain there and thus prolong the pestilence until ninety per cent. of your number had been down with fever; until more than five thousand of you had died; until hundreds of devoted attendants and physicians had laid down their lives for you; and a half-million dollars of charitable funds had been expended in your behalf, when, had you gone out to the camps on the hills for a few weeks, the epidemic would have been over, and more than four thousand five hundred lives would have been saved."

The same question might have been put with even greater pertinency to the ten thousand or more who refused to leave Jacksonville for the camps among the sand-hills, where yellow-fever germs cannot germinate.

The money expended by the Relief Association at Jacksonville last season would have sufficed to transport all the inhabitants of that city to watering-places, and boarded them there in luxury until danger from the epidemic was over.

If an individual builds his house over an open sewer, and deliberately and obstinately remains in it while being poisoned, despite all warnings, and then put out his hand for charity to the world, on the plea that he was sick from sewer-gas poisoning, he would not long receive commiseration and assistance. The same rule will sooner or later have to be applied to communities afflicted with yellow-fever epidemics.

This brings me to the methods of controlling these epidemics when once they have started. The infected locality must be depopulated. There is, there can be, no other practical method of putting a stop to the pestilence when once in the community. Depopulation of the "infected district" of all except the sick and their attendants; the removal of the well to military camps; these measures will put a stop to the worst epidemic in three weeks at the outside. In newly made camps the infection cannot obtain a foothold. Yellow-fever germs must have a soil infiltrated with human refuse in order to develop and multiply; such a soil is found in settled towns where drainage and cleanliness has not received particular attention; such a soil you do not find in newly made camps or about new towns. This fact must be impressed upon the public, in the South especially, until it is recognized that the only safe place for the inhabitants of an infected city, such as was Jacksonville and Decatur the last season, is the military camp on the outskirts of the city. To these "camps of refuge" the people must be removed, by force if necessary.

Compulsory depopulation of the infected districts and removal to military camps may seem, at first thought, a harsh, arbitrary, and un-American method of dealing with the danger; but it is, in fact, the kindest and only humane treatment of the trouble. Whenever it has been tried, as at Gibraltar, in 1804, in Guadaloupe, in 1837, and with the United States troops at Pensacola, and at many other places, the epidemic has speedily subsided.

Philadelphia and New York, in the epidemic of 1822, saved thousands of lives by the compulsory depopulation and closing up of the infected districts. Not only is the infected community saved great losses of life and property by these measures, but the surrounding cities are saved from panics, prostration of business, and danger of infection, by the placing the would-be refugees in the camps.

Professor Dowell, who has had a wide experience with yellow fever, says in a striking passage:

"First, all should leave who can. Go quick. Do not fall over one another in going, but be calm; go as gentlemen, not as sheep. Take as little with you as possible. If you cannot go far, go to the nearest point that is high and dry. Do not go back in the daytime, but especially stay away at night. Live in tents, not in houses; and if the disease is brought you will not take it, even by sleeping in the same bed."

The "camp-cure," if I may so call it, is the only practicable remedy for a yellow-fever epidemic when once it is started.

If the foregoing premises be well taken, it at once becomes evident that the United States Government is the only authority that can deal successfully with this pestilence. Prompt and vigorous action at the first outbreak of the disease is essential. How shall this be secured? Evidently we cannot trust to the officials of the community in which the disease may appear. While this trust might not be betrayed in some communities, in others a short-sighted self-interest would lead them to deny the existence of the disease until perchance it was too late to control it. But even if its presence is admitted, in nine cases out of ten the community will have neither the means nor the wisdom to deal successfully with so formidable a danger. The States are not much better prepared to manage this disease. Setting aside the danger of opposition to the State officials by the community in which the epidemic occurs, as at Decatur, the amount of money required, the materials—such as tents, protected nurses, expert physicians, etc.—could not be procured in sufficient quantity to meet the exigencies of an extensive epidemic.

Nor can I see why any State or community should desire to manage by itself an epidemic of this kind. A yellow-fever epidemic is never a local question. It is never even a State question. Every State in the South is damaged by an outbreak, however obscure the community in which it occurs. When all are affected all are interested in having the disease promptly stamped out. Why should the mere sentiment for "State rights" in any Southern State lead it to cry "hands off" to the general Government if it attempt to put down a danger that threatens not a single State, not the South alone, but the whole country as well.

To meet this danger I would suggest:

1. That Congress appropriate one million dollars to be at the disposal of the National Board of Health, or the Marine Hospital Service, for use in epidemics of yellow fever or cholera that may occur in any section of this country.

2. That Congress enact laws empowering its boards to take full charge of any community where the fever may develop, and continue in charge until the epidemic is over, and the danger of infection of surrounding communities is past.

3. These Government boards shall appoint not less than five subordinate boards of yellow-fever experts, to be stationed during the months of June, July, August, and September, one in each of the following cities: Charleston, Atlanta, Montgomery, Jacksonville, and New Orleans.

4. There shall be stored at not less than fifteen of the

leading Southern cities Government supplies of rations, tents, bedding, clothes, and medicines, to be used in the event of an epidemic.

The following general plan of procedure seems to me to be the proper one in case the fever shall appear in any city or village in this country:

1. It should be made the duty of the Local Health Officer of any community in which a suspicious case of fever may appear, to telegraph to the nearest board of Government experts notifying them of the case.

2. On such notification one or more of these experts should proceed at once to the town indicated, and if the suspicious cases prove to be yellow fever they should take steps to prevent the citizens leaving until they have passed at least ten days in the quarantine camp to be at once established. This measure would prevent panics in the neighboring towns.

3. All the material necessary to establish and equip a camp should be ordered and brought on special trains from the nearest depot of Government supplies, and a camp be made just outside of the infected community. To this should be removed all in the infected district except the sick and their attendants, who should be protected nurses and physicians.

4. After ten days in camp those who desire it should be permitted to return to the uninfected parts of the city or to go North; the destitute in camp should be maintained at the Government's expense; the camps should be well guarded and policed; camps for the white and colored should be separate; in short, such measures taken as would make the camps agreeable places of residence for a few days or weeks. There would thus be no necessity for asking charity of the country at large.

5. None should be allowed to re-enter the infected district until all danger of infection has passed.

This district should be fenced in and guarded.

6. Special boards of experts should be continuously stationed in Southern Florida, and if yellow fever becomes endemic there, intercourse between that section and the rest of the country must be closed during the five hot months of the year.

7. All inland quarantines, as well as those on the seaboard, should be under the control of the Government, and should be so managed as to interfere as little as possible with trade, railroad travel, and traffic, especially in sections where the fever does not exist.

So called "shot-gun quarantines," and those established by communities independently, should be discouraged as useless and injurious.

The methods outlined above are to meet the danger when it is once within our border. This is not the place to speak of measures to keep it out of the country, a most desirable end, but one that cannot always be attained, whatever precautions may be taken.

The plans here suggested may seem bold and radical, but will anything less suffice? The old plan of leaving the community attacked to fight the pestilence with only such aid as charity and volunteer help may give, has failed to check the course of the epidemic nearly as often as tried, and now, with the danger increasing year by year, and the magnitude of the interests endangered greatly increased, the country ought not to content itself with methods that have long since proved failures.

"THE TONGUE IN DIAGNOSIS" is the title of a chart devised by Dr. D. C. Benson, of Baltimore, which, as its name implies, is intended to show at a glance the diagnostic points which may be learned by an inspection of the tongue. It is useful in the way of impressing the fact that the condition of the tongue is often an indication of digestive disorder, or even of the general condition of the patient; but the author is rather fanciful in his attempt to draw a map of this organ with the several parts of the digestive and respiratory systems marked off on its surface.

SIGNS OF THE MORIBUND CONDITION.[1]

BY JOHN SHRADY, M.D.,

NEW YORK.

THE tendency in this, as in like discussions, is toward a pathognomonic programme, in which dogmatism is to hold a high rank. Such unmathematical dangers it is well to avoid; conclusions must not be illogically reached, nor should facts be distorted or misinterpreted. Here, if anywhere, the utmost judicial calmness should prevail, for great interests, even with the most humble, are at issue. Is not death the climax of all individual sorrows, a grief which the most assiduous training can barely assuage? There is a recoil, a grand rally in a most desperate fight, and it is no more than fair to presume that the footing up of all the forces summed up under the conventional term of nature, or, if you please, of the constitution, must show a respectable average of importance. If there are forces which collide, there is necessarily a struggle; and if a struggle, a victory or defeat.

The majority of deaths have somewhat of a common complexion, recognizable in a more or less general degree, according to the analytical powers of the observer. One depends upon intuition, which is a kind of unconscious cerebration, while another will weigh evidence, and come to a slower, more correct conclusion. Again, the optimist will consider only the glowing exceptions, and will in every instance content himself with lottery investments, while the pessimist will figure out only gloomy portents. Let us bear in mind that prognosis deals with but two issues—life and death—that between these two it limits all its prophecies, and further, that the bedside friends care to be informed upon two points only—the diagnosis and the prognosis. How often have the presages, garnered as superstitions in the families of the lowly, put to the blush the confident prognosis of the erudite attendant, who has been foiled in his well-meant efforts. Then, again, how rife are the stories of his sombre predictions that have never been verified. May not the explanation abide with remembered successes and forgotten failures? May not coincidences take the color of facts, and the whole matter constitute a tribute to the conceit rather than to the sagacity of the presager? The soothsayer may have merely won a wager upon two bald antagonisms.

Perhaps the present paper may add nothing to the knowledge already in possession of the profession, but sufficient will be the reward if it but enlarges the sphere of study. The axiom that most men care not for details needs only a passing reference; but it is that very attention to the minutiæ which marks the skill of the detective. There are pathological as well as physiological laws, and both are susceptible of intelligent interpretation.

The Hippocratic face has come down to us as a legacy of the ages; it is a description of the moribund condition only in its last stage, and as such is the faithful record of a most accurate observer. It is a graphic summary of phenomena true to nature, to which nothing material may be added so far as physical appeals to the senses are concerned; it is the study of man in the supreme moment of his dissolution, when the temple of his body has already gone into dilapidation. Here, too, are the bold outlines of a strong limner who has left his sketch to be rounded out by other artists. The classical description of this master-mind of medicine, to have been of any great value, should have included the symptoms of the death-approach in the mildest and most creeping phases of its advance. For here time is of value, and deception or ignorance is out of place with him who needs must settle his account hastily but intelligently. Many reasons, therefore, clamor for the expediency of an early recognition of the death-signs, in which are involved such paramount questions of individual, legal, and social impor-

[1] Read before the New York County Medical Association, April 15, 1889.

tance. Besides the rather immaterial desire of the physician to escape censure, which is the lowest view of the question to be considered, there are appeals to the conscience which must be met with candor, for even the haughty Elizabeth of England is reported to have agonizingly offered "millions for an inch of time." But with this simple allusion to the moral aspects of the subject, the importance of which need not be discussed, the enumeration of the signs themselves are naturally in order. As may be inferred from what has already been said, the great philosopher described a condition when all tormenting officiousness must be abandoned, when hope must yield to the mercy of a peaceful departure.

The signs, then, which belong to the antecedent period are only of sufficient importance to be included within the margin of the present paper, and may be said to appear exceedingly early. Of course all those cases of death which occur with suddenness so appalling as to preclude all possibilities of prediction, and which are so gratefully desirable to some minds, come in for no share of the present discussion. They are the prayer of the soldier who prefers to be killed outright rather than suffer from a wound with only a vague chance of recovery. These sudden cases, usually hemorrhagic in the aggregate, and most frequently met with in the lying-in chamber, give, however, some little hope, even when the radial pulse is imperceptible, provided jactitation be absent, always excepting, of course, when the gush of blood is not at the start overwhelming. Cerebral exhaustion explains the tossing about of the patient.

There are many indications—early and dimly foreshadowing in character—such as may belong to the mere adjuncts of individual life, accompanying but not essential. Under this class may be comprised the suppression of the catamenia where there is a diversion in favor of the acknowledged vital functions; such as the late Dr. Willard Parker aptly likened to an effort to save the hull by the sacrifice of the spars. Months may elapse before the catastrophe, but the catastrophe is almost certain to arrive. Colliquative diarrhœa, as showing defective assimilation, along with muscular relaxation and the loss of serum comes on much later, sometimes at the very close of the disease. This, however, requires corroboration by other signs, such as epistaxis and hemorrhagic alvine discharges, which are so frequently observed in critical cases of typhoid fever, and in the purpuric spots of the malignant forms of the exanthems. More important are the ophthalmoscopic revelations of shrunken retinal arteries and a pallid optic disc; but there are some objections on account of the applicability of this test on the score of annoyance, since the death-chamber has an etiquette of its own. An abnormal appetite, styled by the Scotch "the hunger of death," may be regarded as something more than a purely psychical symptom, and may be interpreted as an intuitive, although irrational, desire to overcome that sense of goneness in extreme exhaustion. It might be called the wail of the nutritive system, and typifies a condition rather than a phenomenon. This may be noticed in the last stages of phthisis, low fevers, and in cerebral complications, and usually will prove in the end a false beacon. Optic delusions, as manifested by picking and fumbling of the bedclothes, extreme muscular prostration by the sliding toward the foot of the bed, and irregular spasms of peripheral muscles in subsultus tendinum may all be said to "break the promise to the hope." The dilated, glazed eye and relaxed smile also give no more cheer; but, on the contrary, are only later editions of the same pitiful story. No matter how, death begins at the periphery and ends at the centre; growth shoots forward, decay recedes, as is made obvious in the plant, which withers in the leaf before it shrivels in the stalk.

The dying state can never be arrested; if once begun it must end; therefore, as already seen, it behooves us to recognize it as early as possible. Clearly all unverified prophecies are mistakes in prognosis. The individual who struts the streets, vaunting that years ago he cheated death, never neared the archenemy of his race—he merely sighted but never crossed the line. Watson, in his charming treatise upon "Practice," takes up the simile of the stopped watch and asks what may be the cause. Truly the only way to discuss the phenomenon is from the mechanical stand-point. The heart is the force-pump, whose motor is nervous force—the ultimate origin and essential qualities of which can never be discussed with either wisdom or satisfaction. For the present purpose it is quite sufficient to concede that the heart finds its immediate stimulus in the blood, and that sudden deaths are mainly due to interrupted blood supply. At present heart-failure has become a cant phrase, under cover of which many improbabilities are concealed.

Probably the pulse has been always regarded as the most reliable indicator of approaching disease. The touch probably gave Hippocrates, and after him a long line of followers, the first triumphs in prognosis. To the skilful observer it certainly imparts no little value in the making up of an opinion regarding an issue. An intermittent beat, even though due to the excessive use of tobacco, coffee, etc., the encroachments of age, or the manifestation of the emotions, may well be regarded with apprehension. And yet, such is the uncertainty of our science, a pulse (for instance in the gouty) may intermit for years. Such a condition may only concern the far-off future, but it nevertheless sounds an alarming note, especially when it occurs in the course of a debilitating disease. The writer in more than one instance, as in consumption and cancer, has known it to be a virtual herald a fortnight before the occurrence of death. It may even disappear entirely during an interval of indefinite continuance, but it certainly means something. In all dubious cases the sphygmograph, provided the mechanism be sufficiently delicate, or its tracings rightly interpreted, might prove of inestimable prognostic value. Aside from this aid which so captures the eye, many also have an intuitive discrimination of the pulse's force and volume who are incapable of analyzing successive waves of sound. To most who have not the musical gift, sounds are a jargon rather than a language, and to such as these the touch is really of more value than the stethoscope. Let it be remembered that the pulse with our ancestors imparted a deal of knowledge, long before the advent of the clinical thermometer; with them the tactus eruditus took the place of all other devices.

After the intermittent pulse, which, as already asserted, appears so early in the stage, there are many points quite apparent to the senses of the observer, such as the ashy tint of the countenance, the purple-hued nails, the distinctive white lines around the orbicularis oris muscle in serious forms of scarlatina, as taught by Trousseau, the whispering voice, the pleading look, and the grunting respiration. All of these are expressions of a hindered circulation or shock, and usually are not indicative of pain. These minor variable conditions give at times many illusory hopes of an improvemement, although in the main the symptoms are halts upon the steps of the terrace, the slope being still downward. Subsultus tendinum, hiccough, and convulsions, which appear later, also belong to the phenomenal manifestations of the nervous system, and may be regarded as peculiar disturbances.

Left unilateral dropsy, beginning in the foot, is a very valuable sign of the gradually approaching end, as showing that the circulation is beginning to falter in its work. This sign, which may be classed as a kind of folk-lore, claiming a long line of descent, is much commented upon by relatives and friends. Conjoined with this may be noticed a coldness of the ears, tip of the nose, and the malar regions, to be followed much later on by the same conditions in the patellar surfaces. These may come and go at longer or shorter intervals—perhaps weeks may elapse—but they are ominous of evil.

Among the unclassified symptoms indirectly referable

to the brain, in the general sense of the aggregation of nervous centres, temperature must be considered. With the specially dangerous temperature of 105° F., particularly if long maintained, an unfavorable prognosis should be the rule, with little, if any, qualification. This degree is not very uncommon in a paroxysm of intermittent fever; but the duration is short and seems to be of not much significance as regards marked constitutional disturbances. In very truth, when it manifests itself as a short, sharp invasion, it should afford more consolation than the slow, insidious, and only slightly curved ranges. "A sustained pyrexia," says Fothergill, "melts down the body-tissues and endangers life from the accumulation of the products of nitrogenized waste in the blood." Caution should be exerted against slovenly observations confined to the surfaces of the body, as, for example, when the writer unexpectedly found a rectal temperature of 108° F., with palpably cold extremities, in a case of malignant scarlet fever which ended in death, during the ante-eruptive stage, but a few hours after seizure. The temperature in this instance started with a record of 102° F., at 7 A.M., and death took place at 10 P.M. The occurrence of scarlatina in other members of the family within a week afterward aided in the diagnosis. If temperature represents molecular changes, surely here was an instance of intensity in disintegration, or as Williams, in accordance with an older view, puts it in his "Principles of Medicine," here was "the premature triumph of dead over vital chemistry." The explanation of phenomenal ranges such as these must be looked for somewhere along the line of the ganglionic system of nerves, which presides over the functions of nutrition, secretion, excretion, etc., a system incapable of independent study, since it cannot be isolated. There are, besides, conditions of abnormally low temperature met with in the subject which escape observation, particularly in shock, because they are not submitted to the thermometer. Nor, indeed, have they been sufficiently studied to form a system in view of the evidences furnished by other concomitants. A temperature below 95° F. is usually quoted as being very serious.

Coma, which may be regarded as a form of asphyxiation dependent upon some deleterious force or agency affecting the nervous system, is to be regarded among the surest signs of approaching death. This phenomenon may, primarily, arise from acute pulmonary disease, or, secondarily, from deficient or impure air. Besides the stupor, it may be outwardly manifested by alar or abdominal respiration, or, to express it more tersely, the supplementary muscles of breathing drawing the bony framework of the chest upward, may be brought into requisition for extra work. The blood amenable to toxic influences affects the brain, and through it eventually paralyzes the respiratory organs. The onset of the symptoms may be so insidious as to escape notice, especially when the actual count of breaths is omitted. Here, in passing, it may be noted that when the respirations are thrice the normal, and continuous, an unfavorable prognosis should be the rule. Perhaps the only exception, and that a partial one, is to be found in the case of uræmic asthma, either with or without pulmonary œdema; but even this condition does not admit of many repetitions. Fortunately even here the brief duration is in its favor, notwithstanding the suspicion that the function of the pneumogastric nerve is invaded; to put it metaphorically, the enemy is on the skirmish line.

In the absence of pain but very few have a conviction of impending death, unless there be a sudden cessation, when the popular notion of so-called mortification plays the part of alarmist. This immunity readily explains the hopefulness of the consumptive, and, in part, the ecstasy of those whose ganglionic system has suffered a paresis by reason of some extensive mutilation. Hence the difficulty in such cases of obtaining ante-mortem statements, in which, as an earnest of truthfulness, the law requires a clear mind, a sense of responsibility, a belief in impending dissolution, and that innate sense of justice that the innocent be not wantonly or maliciously accused. Many victims of mortal injuries, in these official interviews, cannot be induced to believe that there is even a remote probability of death, so perfect is the euthanasia; they seem willing to make the impartial, candid statement but not an admission of the precarious tenure of their life. Thus the law admits a doubt of absolute sincerity and accepts only clews for corroboration, when evidence, presumably overwhelming, should be given its full face-value.

The unrhythmical respiration, named the Cheyne-Stokes in honor of its co-describers, may also, in common with uræmic asthma, manifest itself at odd intervals, as also the exhilaration of uræmic poisoning, which the late Alonzo Clark was wont to describe as it occurred under his observation in the Bellevue wards. He said that he regarded the pranks and jollity of the subjects as a sure precursor of an early death; he maintained that this was a stage antecedent to coma, and bore about the same relation the one to the other that the hilarity of drunkenness did to its stupor—that it was merely the edge of the coming storm.

Of all the physical signs, the up-and-down movement of the pomum Adami, as temporarily seen in the act of swallowing, appears very early in certain forms of the dissolutive stage, usually at the period of tracheal râles; in phthisis it may precede the catastrophe even a fortnight or longer; of course, in pneumonia, its invasion, so to speak, is more pronounced, and its duration immeasurably more brief. The writer has observed it so frequently that he has come to regard his suspicions as convictions. This movement may be the measure of an overwhelming generation of carbonic-acid gas, or an insufficient supply of oxygen. It is very marked in pulmonary complications, and when appearing in diphtheritic croup neither tracheotomy nor intubation is available; this statement should have the force of a rule. Although hardly able, from infrequency of opportunities, to generalize, yet the writer has mentally predicted the issue of certain operations on this spectral sign alone. He well remembers a case in which, during narcosis by ether, respiration was maintained by tracheotomy, and the patient died, notwithstanding all the favorable surroundings when this warning was conspicuous and constant throughout. He does not pretend to say that the surgical interference was an etiological factor, but simply unnecessary, as proven by the sequel. Still, in these cases the pressure brought to bear in favor of a trial for salvation may be irresistible in its pleadings; so then, in similar contingencies, let there be no assurances but rather a guarding with discounted hopes. The explanation of the phenomenon in question may be said to be resident in the par vagum, made manifest by a paralysis of its inferior laryngeal branch, although some aver that muscular effort alone may furnish a ready interpretation. It is a fact demonstrated by vivisectionists that when the pneumogastric on both sides is divided there is an increased rapidity and difficulty of inspiration. The animal becomes quiet soon after the operation, without evidence of suffering, the character of the inspiration being long, slow, easy, and silent, while the expiration is sudden. The writer has fortunately at hand the notes of an autopsy of a dog upon whom the late Professor Dalton had ligated both pneumogastrics, the duration of life having been exactly two days. The death, as given in the verbatim report, was brought about in the following manner. The glottis was paralyzed; the inspiration accordingly became labored, and sucking. The stimulus to respiration was also less, the carbonic acid not being as irritating as before the division. The next step was a stagnation in the pulmonary capillaries, owing to the fact that the glottis could not take in sufficient air. The circulation being interfered with the blood began to block up; the respiration, being less and less, constituted a condition of imperfect arterialization, and carbonic acid, being a narcotic poison, produced coma. With this explanation, which in the notes is still further pursued, touching as it

does the act of swallowing and the arrest of the peristaltic action of the intestines, the significance of this patent manifestation may be readily divined. Our colleague, Dr. F. A. Thomas, an ex-Surgeon of the Police, who had become much interested in the prognostic value of this sign, was wont to apply it as a test for those cases which bring so much opprobrium upon medical practitioners in public life; to wit, the ability to decide between drunkenness and compression of the brain by blood-clot or fracture. He escaped much future embarrassment by his conviction that this paralysis of the glottis is invariably absent in alcoholic intoxication and present in the moribund condition; in other words, he accepted the gravity of the case at once if he noticed this up-and-down movement of the pomum Adami, and took good care that the individual arrested for being drunk had some better accommodations than a cell, the omniscient policeman to the contrary notwithstanding.

The conclusions of the writer are:

1. That in general the signs of death that are the most trustworthy appeal to the eye.

2. That among these the respiratory function holds the first rank, both in cases of coma and asthenia, more noticeably when the two modes of death are blended.

3. That the death by coma represents, in duration, the longest period.

4. That the most valuable sign of inevitable dissolution is the up-and-down movement of the pomum Adami, always providing that it be persistent.

5. That temperature-changes deserve recognition, particularly when the curves are sharp, high, and continuous, or when they are below the normal.

6. That an intermittent pulse is an early sign of death, especially when not due to any disturbed action of the nervous system. The qualification necessary to save this statement from being absolute lies in the fact that occasionally individuals are found who maintain this peculiarity through a long, healthful life.

7. That deaths from syncope are too sudden to allow of much observation or study.

"SUSPENSION" IN THE TREATMENT OF LOCOMOTOR ATAXIA.

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NEUROLOGIST TO THE RANDALL'S ISLAND HOSPITAL, NEW YORK.

My first induction into the suspension treatment of locomotor ataxia was through the columns of the *New York Herald*. Rapidly following this appeared articles in The Medical Record and *New York Medical Journal, Philadelphia News, Times, and Register, Journal of the American Medical Association*, etc. The impression I gained from reading these articles was that the treatment was empirical, it being illogical, untheoretical, and unscientific; as any treatment must be that claims to decidedly improve, if not cure, a condition that is the result of a connective-tissue degenerative inflammation in nerve-tissue.

In locomotor ataxia the relation between cause and effect is perhaps better marked than in any other of the nervous diseases. As the nerve-cells are encroached on by the proliferated fibrin-cells and leucocytes, so do the hyperæsthesia and paræsthesia manifest themselves. After the organization of these elements into connective tissue (which here, as everywhere, shows its inherent property of contraction) anæsthesia becomes more and more marked as the nerve-cell becomes more and more compressed, until death of the nerve-cell and complete anæsthesia results. But the process does not stop here, for the contraction still persists, and finally the nerve-cell is completely obliterated.

It has been stated that a cure has resulted in well-marked cases of ataxia after the suspension treatment has been continued for a long time. Now, while we know that regeneration of normal tissue may take place in bone, muscle, skin, etc., I have never seen any report of such regeneration taking place in nervous tissue; and I think it is a rule to which there is no exception, that when death of a nerve-cell has taken place regeneration is impossible and the function of the part supplied by that cell is destroyed forever. I have now under observation a case of diffuse peripheral neuritis (post-diphtheritic) in which there has been an apparent complete recovery, but close and careful examination shows there is still a paresis of some of the small muscles, which beyond doubt will be permanent.

Impressed as I was with the idea that our present resources for the treatment of locomotor ataxia were of no value, even in relieving the distressing symptoms of the disease, I began the suspension treatment in the nervous ward of the Randall's Island Hospital with but little hope of benefit and more from a sense of duty to the unfortunate patients than from any expectation of doing good. The patients were all males, Sayre's apparatus being used. The treatment was conducted under the personal observation of the house physician, Dr. McCready, to whom I wish to acknowledge my thanks for the accompanying histories.

In consequence of a mistake of mine the early part of the treatment was carried out by suspending the patients three times a day for three minutes each time, so that the first fifteen suspensions in all the cases occupied a period of but five days. In two of the cases most marked and rapid improvement took place at the beginning of treatment. After this, the treatment was as follows: Commencing with half-minute suspensions on alternate days, the time was increased one-half minute each time until three minutes was reached (sixth suspension); after this the patient was suspended for three minutes every second day. The patient was raised just far enough to let the tips of the toes touch the ground. In some of the cases the loops were put under the axilla; in others they were left off.

Case I.—M. O'S——, aged thirty-nine. History (of ataxia) for three years. Fulgurating pains; cramps in feet and legs; diplopia; incontinence of urine, etc. After fifteen suspensions: Incontinence of urine less marked; can now hold urine a short time. No pains since treatment began. Gait improved. Patient says he feels stronger. After twenty-four suspensions, can hold urine now for ten minutes. Has had no "pains" or cramps in legs and feet since treatment began. Gait very much improved. Ataxia in walking markedly diminished. Can walk almost in a straight line with eyes closed.

Case II.—Aged thirty-eight. Cerebellar hemorrhage (?). History for seven years. This patient was placed under suspension treatment by mistake for a case of ataxia. After twenty-four suspensions gives general subjective improvement, says he feels stronger in his legs, and can walk better, but as he is willing to agree to anything his statements are of little value. No objective improvement.

Case III.—J. D——, aged sixty-three. History for eight years. Fulgurating pains very severe and frequent; girdle sensation well marked and painful; anæsthesia of feet and legs; diplopia; "Argyle-Robertson" pupil; ataxic gait very characteristic. Cannot stand with eyes closed, marked straining at urination, etc. After fifteen suspensions can stand for short time when eyes are closed; gait very much improved; can now walk with out a cane; numbness of feet diminished. The feet, which were always cold before, are now warm. Anæsthesia of feet less marked. Can pass urine easier than before. No improvement in pains after twenty-four suspensions. Pains unaffected. Patient thinks they are more frequent and severe than before treatment. Gait very much improved; formerly walked with a marked ataxia of feet, bringing down the heel with a severe shock. Now the walk is very slightly characteristic and the "stamp" of the heel very little and would

hardly be noticed. There is very little inco-ordination of the feet, and the entire appearance of the patient when walking is changed for the better. Urination less difficult; patient says, "Can pass urine more freely and with less effort." For the past two or three years has always complained of cold and dry feet, his feet never being even moist in the warmest weather; since the commencement of the treatment his feet have been warm, and for the past two weeks have perspired naturally. Subjective increase of strength in lower extremities and back; can walk a longer distance now than before. Cramps in legs, which were frequent before, have entirely left him.

CASE IV.—Aged fifty-six. History for nine years. Shooting pains and inco-ordination of lower extremities; girdle feeling. Absent reflexes. Romberg symptom, diplopia, ptosis, difficulty in urination, etc. After fifteen suspensions, much improved in general condition, walks better; legs feel stronger after twenty-five suspensions. Before treatment had fulgurating pains and cramps in feet and legs almost every night, now has cramps in legs only about once in ten days and they are not so severe or of as long duration. Has had no pains at all since suspension was commenced. Urinates with less difficulty, and bladder less irritable. Used to have to empty the bladder five or six times every night, now has to urinate two or three times during the night. Gait much improved, but little "stamp" to the heel. "Can walk a mile now with as little fatigue as a quarter of a mile before."

CASE V.—A. C——, aged fifty one. History for three years. Fulgurating pains, inco-ordination, gastric crises, ataxic gait, girdle sensation, diplopia, etc.

Until four days before suspension was commenced patient was confined to bed for over eight months on account of extreme ataxia of feet and legs. Whenever he would attempt to walk his legs would move about in the most irrregular way, and as he could not place his feet on the ground with any degree of certainty at all he entirely gave up walking. After sixteen suspensions his gait is fairly good, though it still shows some inco-ordination; he can follow a straight line for a short distance, can start walking and stop abruptly without much staggering, can turn about suddenly ("right-about-face") with only a little wavering. Has not been in bed in the day-time since treatment was commenced. Diplopia almost gone; subjective increase of strength in lower extremities since commencement of suspension.

CASE VI.—C. B——, aged fifty-three. History for five years. Fulgurating pains; ataxia of legs; weakness of legs and back, and general disinclination to move about; patient used to sit in the ward all day, very seldom moving from his chair; said he was not able to walk. After fifteen suspensions: So much improved that he insisted on having his discharge, saying he was entirely free from pain, and could walk as well as he ever could. The improvement was marked from the first suspension. In this case the suspensions were made for three minutes at a time, three times daily, for five days. I did not see this patient at the time of his discharge, but Dr. McCready, the house physician, states that his gait was entirely normal and his general condition very much improved.

That there is a direct relation between the effect and cause in these cases there can be no doubt. In all the cases, for years there had been no change at all, or a gradual increase in the severity of the symptoms. All plans of treatment had been followed and abandoned. While under the suspension treatment practically no medicine was used, only one or two cases taking an iron tonic (ward mixture). Everyone of the patients said he was better than before treatment. At first I thought this might be due to psychic influences and the result of suggestion, as there was a free interchange of opinion among the patients regarding the treatment, and Case II. points strongly in that direction. But I am now confident that this is not the case, and that there had been a direct impression produced on the spinal cord, but in what way I am as yet undecided. It is hardly reasonable to suppose that the cord itself was stretched, for it floats so freely in the spinal canal that the counter-extension of the weight of the body is not sufficient to produce that result without the greatest pain. It is more likely that the traction exerted on the spinal nerves in some way brings about a change in the circulation and nutrition of the cord, and the amelioration of the symptoms is due to a lessening of the vascular supply of the cord and its membranes. How the result is brought about I am unable to say, but that there has been not only a subjective improvement (which in itself is of great importance), but also an objective one, the above cases fully demonstrate.

105 EAST FIFTY-FIFTH STREET.

Progress of Medical Science.

HYDROXYLAMINE IN SKIN DISEASES—Hydroxylamine is used in different skin affections as a substitute for chrysarobin and pyrogallic acid. Similar to those, it has highly reducing properties when brought into contact with O-carriers. Its medicinal use was first proposed by Professor Binz, and first practically applied by P. T. Eichhoff, while it is known as a chemical substance ever since 1865, when Lössen obtained it by reducing nitric ether of methylene with granulated tin. Hydroxylamine is a strongly alkaline substance, which, combined with acids, forms well-crystallized salts. In a free state it is only known as watery solution. Its chemical formula is

$$N\begin{cases} OH. \\ H. \\ H. \end{cases}$$

which shows that it derives from ammonia, in which one atom of hydrogen is replaced by hydroxyl.

Hydroxylamini hydrochloras, or

$$N\begin{cases} OH.\ HCl \\ H. \\ H. \end{cases}$$

is obtained by adding hydrochloric acid to the solution in water. It consists of colorless hygroscopic crystals, soluble in water, alcohol, or glycerine. The solutions turn blue litmus paper red, but leave Congo paper unaffected.

Eichhoff used the following formula:

℞. Hydroxylamini hydrochlor..... gr. ij.
Spirit vini,
Glycerin..... .....ää ʒ ij.
S.: For external use.

After preparatory washing of the diseased parts of the skin with soft soap, this solution was applied from three to five times a day. It has been proposed to use ointment as a base, but the formula above is to be preferred, as the alcoholic solution penetrates the skin much more rapidly than ointments. The author has tried hydroxylamine in the following skin diseases: Ringworm, sycosis parasitaria, and lupus vulgaris. Especially with lupus, his results have been excellent. He furthermore thinks cases of psoriasis and chronic parasitic eczema suitable for the hydroxylamine treatment. He strongly advises further trials and experimenting with the new remedy, which has the advantage of combining cheapness with usefulness. Not only by Eichhoff, but also in the Vienna clinics, an ointment of the following composition is employed:

℞. Hydroxylam. hydrochlor..... gr. ij.-viij.
Lanolini..... ʒ iv.
Ol. olivæ..... ʒ ss.

—*The Provincial Medical Journal.*

CONGENITAL CEREBRAL SYPHILIS.—Dr. Angel Money recently exhibited before the London Pathological Society specimens from a case of chronic syphilitic meningitis, arteritis, cerebral atrophy, and sclerosis in a boy aged four. He was first seen at the age of eleven months, suffering from hydrocephalus. The skull was natiform, the root of the nose depressed, the spleen enlarged, and there were

signs of disseminated choroiditis. Syphilitic taint was discovered in every member of the family. The boy improved and seemed to be almost well until, on August 18, 1888, left spastic hemiplegia developed. On October 11th, he lost his speech and developed right spastic hemiplegia, and on the 19th he died. At the necropsy, the brain and dura mater were found to be adherent everywhere, but the adhesions could be separated. The arteries were much diseased, as was also the brain-substance. The atrophy and sclerosis were most marked in regions supplied by the diseased arteries. The dura mater was four lines thick in the temporal regions, and resembled a fibroma in structure. The ependyma was granular in appearance, due to the formations of granulations composed of small, round nuclei, and the structure was of considerable density. Dr. Money also exhibited the brain of a microcephalic child, showing atrophy and sclerosis of the left hemisphere without disease of the arteries or membranes, but yet of syphilitic origin. The child could not stand, or sit, or talk, and all the limbs were weak and spastic, but the left arm least so. Death occurred at the age of sixteen months, and the brain weighed fourteen ounces.

Sculptor's Chisels in Osteotomy.—Professor König, of Göttingen, states that in performing osteotomy he has for some years used chisels, from one inch and a fourth to two inches in breadth, and has found that he can thus divide the bone very speedily and without the exercise of much force. Three cases are reported to show the advantages of these instruments. One is a case of anchylosis of the knee-joint treated by division of the articular extremity of the femur, another of division of the shaft of the femur for shortening and distortion after fracture of this bone, and the third a case of division of the femur after Macewen's method for genu valgum. An incision having been made at the usual situation, the soft parts were separated by an elevator from the anterior and posterior surfaces of the bone, and the sides of the wound separated so as to allow the introduction of a chisel broad enough to divide at once the whole thickness of the femur. The chisel was not applied at right angles to the long axis of the bone, but obliquely, so as to be driven obliquely from below and inward, upward and outward. An osteotomy thus performed is usually completed in a few minutes, except in cases of adult subjects, in which a longer time is required.—*Centralblatt für Chirurgie.*

Prolapse of the Placenta, without Placenta Prævia.—Münchmeyer has reported two cases of prolapse of a normally attached placenta in which the placenta was born before the child. The first was a multipara with a flat, rachitic pelvis; the fœtus was in head presentation. Labor proceeded without hemorrhage until the os was dilated; the head failed to descend; the placenta was not perceived on examination. The placenta suddenly presented, after several strong pains, in the vagina by its fœtal surface. The patient was immediately anæsthetized, the vagina disinfected, and the hand introduced and the placenta expelled. The membranes had ruptured at the border of the placenta, they were otherwise intact. Neither fresh nor previously coagulated blood was found on the placenta. The cord was cut, and it was found that the feet of the fœtus lay beside the head. Extraction by the feet was attempted, but the size of the fœtus and the impaction of the arms rendered it impossible, and embryotomy and craniotomy and delivery of the head with the cranioclast were performed. The mother suffered from parametritis with abscess, but recovered. The second case was twin pregnancy in a multipara; after a prolonged first stage a female child was born living; there was no hemorrhage, nor did examination reveal a presentation or prolapse of the placenta. The cord was short (between twelve and thirteen inches long) but was not ruptured. Examination revealed a placenta presenting by its fœtal aspect which belonged to the second twin. The expulsion of the child (stillborn) and placenta followed; the placenta of the first twin was then removed. The two placentæ had been slightly adherent at the chorionic surface; both were *placentæ marginatæ*. The mother recovered without complications. Münchmeyer has no explanation for the prolapse of the placenta in these cases; he mentions the following diagnostic points between prolapse of the placenta in placenta prævia and prolapse when the placenta is not prævia. Prolapse of the placenta when not prævia gives no sign or symptom for diagnosis except sudden failure of fœtal heart sounds during labor; placenta prævia and prolapse are diagnosticated by hemorrhage; in placenta prævia the fœtus often perishes during pregnancy; in prolapse when not placenta prævia fœtal death occurs at the moment of birth; when a normally implanted placenta prolapses it presents by the fœtal surface; placenta prævia presents by the maternal surface; the danger for the mother from septic infection is equally great; from hemorrhage, great in placenta prævia only; the prognosis for the child is equally grave in both cases.—*The American Journal of the Medical Sciences.*

Atrophy of the Gastric Mucous Membrane.—Dr. Meyer has found this condition in a considerable number of stomachs, the atrophy being complete in four cases and progressing in the others. Etiologically, the atrophy arises from a chronic catarrh, which is either primary or secondary to a malignant growth or to toxic gastritis (*The American Journal of the Medical Sciences*). The process may be one of two kinds. First, it may be of a degenerative nature, consisting of an infiltration of round cells, chiefly from the surface, so that the glands are forced to lie obliquely or even horizontally, and are, finally, partially obliterated and replaced by a formation of cysts, with only here and there a remnant of glandular structure. The *muscularis mucosæ* is thickened, and connective tissue projections from it extend toward the mucous surface. Secondly, the process may be of the character of a formative irritation of the intraglandular tissue. In this the naturally scanty connective tissue grows thicker, strangles the glands, leaves a net-work with large meshes, and causes a disappearance of the *muscularis mucosæ*. These two processes, the parenchymatous and the cirrhotic, are often commingled. The author suggests the term "phthisis ventricula," on the ground that the other names applied are unfitting. The gastric wall may be of normal thickness, thinner than it should be, or greatly thickened. The author reports a case in which this last condition obtained. The process begins, as stated, usually on the free surface of the mucous membrane, leads to the formation of cysts, and, finally, to a broad band of connective tissue. All traces of the glands finally disappear. Sex appears to have little influence in its production, but it is most apt to develop in the latter years of life. Carcinoma, even in distant parts of the body, plays an important *rôle* in its etiology. The duration of the disease appears to be between nine months and two years, as nearly as can be determined. The symptoms, though not constant, are dilatation of the stomach, disappearance of the natural secretion and of mucus, diminution of the gastric movements, cardialgia. All these symptoms attend chronic gastritis, carcinoma, and neuroses. The diagnosis is often impossible, but an important symptom is the good general condition and the absence of emaciation, which indicates more than an outward relation to progressive pernicious anæmia, especially when digestive disturbances attend the latter affection. The prognosis is unfavorable, and therapeutics can offer little, though lavage with hydrochloric acid and arsenic may be tried. In view of what has been said, the author deems it important—1, that all patients with carcinoma of any organ, and who present any symptoms of pernicious anæmia, have the functions of their stomach tested; 2, that after death the organ be histologically investigated; 3, that the condition of the vagus, sympathetic, and Auerbach's and Meissner's plexus be studied.

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THE CAUSES OF APPARENT DEATH.

To the lay mind the state known as catalepsy is probably oftenest thought of as the cause of apparent death; and most of the old-wives' tales about burying people alive are connected with a history of a trance or cataleptic state. As a matter of fact, however, catalepsy is extremely rare, and a cataleptic state in anywise simulating death is rarer still.

M. Brouardel, in a recent discourse (*Gazette des Hôpitaux*, No. 55, 1889), has gone over most of the various causes which practically do sometimes cause conditions simulating real death. First among these naturally comes the condition of asphyxia, so often met with in the newborn. Here life may apparently be extinct for one, two, three, or even four hours. It is claimed that the heart may cease to beat for a time and yet that life may be restored. We must hold it very doubtful, however, whether the heart ever renews its action after it has once entirely ceased.

Hysterical patients sometimes pass into a state of trance or catalepsy, in which there is a very great lowering of all the vital functions—a kind of human hibernation. But these patients always show some signs of vitality to even a superficial examination.

Sudden heart-failure with syncope, from various causes, is held to be the most frequent cause of simulated death. Brouardel cites the case of an individual who had been condemned to death, and who was hung by the neck for twenty-five minutes. He was taken down, carried to a dissecting room, where, an hour later, on opening his thorax, his heart was found to be beating. Hoffmann reports another case of this kind.

In the algid stages of cholera and some other infectious fevers a condition resembling death sometimes occurs. It has been shown that certain infections develop ptomaïnes which have a powerful anæsthetic influence upon the organism.

Exposure to excessive cold produces a drowsiness, and finally a coma, which resembles death, and which, in fact, usually ends fatally. So, too, immersion in water may apparently extinguish life. Yet resuscitation occasionally occurs, even after more than an hour. M. Sestier reports seventeen cases of "fulguration," or strokes by lightning, in which the patients remained in a state of apparent death for a long time. In the same way violent falls, concussions, blows, and gunshot wounds may, by causing cerebral concussion, apparently, as well as really, extinguish life.

Partial and non-fatal asphyxiation may be caused by being buried in the earth. It is claimed that in certain cases individuals have been buried for two or three days and still restored to life, but doubtless the earth was light above them.

Carbonic oxide, alcohol, and anæsthetics all may produce respiratory and partial heart-failure, with apparent death. M. Laborde has reported the case of a drunkard who was so poisoned by alcohol that the temperature sank to 76° F. in the rectum, and Bourneville cites a similar case. Both persons recovered.

The tests for death in all these cases are well known, and most of them easily applied. To the eye of the physician the physiognomy is generally enough. The entire and continuous cessation of respiration, of the heart-beat, and of the blood-flow is usually sufficient to confirm the physician in his opinion of the case.

THE PREVALENCE OF PROSTITUTION AND SYPHILIS IN THE UNITED STATES.

A RECENT work by Dr. L. Reuss, briefly reviewed elsewhere, on "Prostitution from a Sanitary and Administrative Point of View," contains a chapter on syphilis and prostitution in the United States which calls for some attention and criticism.

Dr. Reuss takes the stand held by many Continental physicians, that prostitution should be regulated by the State both for sanitary and moral reasons. And he cites the frightful moral and physical condition of this country as an illustration and argument.

There are, he says, three hundred and sixty-eight thousand prostitutes in this country. In New York the number is between thirteen and fifteen thousand; in Philadelphia it is still greater. In each of these two cities there are about fifty thousand syphilitics. In the Marine Hospital service one man in every five contracts syphilis annually; in the navy, one in every twenty. We are told, finally, that venereal diseases form the *chief remunerative source* of practice to American physicians!

The figures and statements thus made will certainly astonish American readers; but it will require only a brief glance at Dr. Reuss' own work to show that his presentation of our case is a ridiculously distorted and incorrect one.

Take, first, the question of the number of prostitutes in the United States as compared with Europe. It would be a small estimate to place the number of prostitutes in Paris at twenty to twenty-five thousand. The lowest estimates are fifteen thousand, the highest forty-five thousand.

In Bordeaux, with 250,000 inhabitants, there are estimated to be 6,000 prostitutes, or twice the number relatively to that of this city.

In Marseilles the population is 362,000; the estimated number of prostitutes, 8,400.

In Vienna the population is 1,169,000; the prostitutes about thirty thousand. In London, with a population of 5,000,000, the prostitutes number about one hundred thousand.

In Berlin, a city of about the size of New York, the prostitutes number about thirty thousand, and the number of syphilitics among adult males ranges from two to four per cent.

These figures all go to show that, if anything, the number of prostitutes is relatively smaller in this country than in Europe. The figures would be still lower if it were not for the pernicious influence of the horde of syphilized and degraded immigrants with which our country has been flooded in recent years. These people not only bring over diseased bodies, but establish and propagate a low grade of morals, acquired in Europe.

Such facts, however, have no bearing on the alleged efficacy of governmental regulation in lessening the prevalence of prostitution or the spread of syphilis. In fact, the figures collected by Dr. Reuss do little more than prove that the attempts of the State to repress the sexual instincts are utter failures.

The spectacle of a Parisian, however, lamenting the immoralities of the Americans is most unique and picturesque.

The fact is that syphilis in many, if not all, civilized countries is in the position of an epidemic in the stage of decline. It is not so malignant and not so infective as it used to be; and in studying the influence of State regulations and sanitary measures upon it, this fact must be borne in mind. Probably in France, the home and godfather of the disease, and even in Paris, where the world, according to Ricord, revolves around the vagina, syphilis is also decreasing in virulence, although the frequency of the hard chancre, as compared with the soft, is said to be much greater than in other countries. Paris is a city with some regulation of prostitution, but with a fecundity in hard chancres that makes it a dangerous resort for the libertine.

TEACHERS' LARYNGITIS.

In a pamphlet entitled "Board School Laryngitis," Dr. George Macdonald, of London, calls attention to a peculiar form of laryngeal inflammation which he has observed in teachers of the Board or Public Schools.

It is essentially an aggravated form of chronic congestion of the laryngeal mucous membrane. It results from the continual strain put upon the voice by persons who are overworked, and whose work is carried on in ill ventilated, noisy school-rooms. Of local causes the primary one is said to be faulty vocalization. The teacher thinks only of making herself heard, and pays little attention to the quality of the voice as long as it is audible. Another local condition is the constant inhalation of chalk dust, which not only irritates the throat, but causes a chronic rhinitis.

In the early stage of the trouble the appearances are simply those of ordinary chronic laryngitis, but in cases of a year's duration or more, one of two conditions is seen:

1. That where varicose veins on the upper surface of the cords form the prominent objective feature.

2. That where various thickenings of the margins of the cords afford the distinctive characteristic.

These two conditions—the varicose and the hypertrophic—are very rarely associated. The laryngeal appearances are carefully described by Dr. Macdonald.

The treatment of the varicose form consists, first, in allaying the inflammatory condition by sprays, inhalations, or local applications of stimulant, sedative, or astringent mixtures, according to the degree of disturbance. The varicosities are then treated by the electric cautery.

In the hypertrophic form one finds usually small benign papillomata such as have been described sometimes as singers' nodules. But Macdonald believes them to be far more constant and characteristic of untrained voice-users. The treatment of these, after subduing the inflammatory condition if it be present, is to remove the growths by means of Mackenzie's cutting laryngeal forceps.

Perhaps the most important suggestion made by our author is in the line of preventive treatment. All teachers, he says, should undergo a course of training in the science of teaching, and should also be drilled in the art of voice-production, not only in singing, but even more in speaking. They should be taught to breathe so that their chest-walls do all the heavy work; while their vocal cords should effect no more than the mere production of sound, the mouth and lips bearing all the onus of producing articulate speech. And herein lies the whole secret of practical elocution. At present the average speaker, whether member of Parliament, clergyman, or schoolmistress, attempts to enforce attention by screaming with the vocal cords, instead of speaking with the mouth and lips. Greater attention should be paid also to the ventilation of schools, and the size of the classes.

We are told that the number of pupils in the classes of our New York public schools is less than it is in most European countries, and Dr. Fayette Smith states that throat troubles are almost unknown among our teachers. It is gratifying to learn also that throat affections are far less numerous among American clergymen, because, as we are told, a scientific training in voice-use is made part of their education. The nasal twang of American speech is perhaps less charming to the ear, but it is a more scientific and rational mode of vocalization than are the throaty intonations of Englishmen. We may be thankful that nature thus has her compensations.

THE INTERNAL USE OF CHLOROFORM.

Chloroform has long been used internally as a symptomatic remedy in flatulence, diarrhœa, neuralgic pains, and cough. It is a substance which is quickly absorbed by the stomach and as quickly passes out of the system by the lungs, skin, and kidneys. Its specific use for serious maladies has rarely been attempted.

There have, however, lately appeared several articles claiming for this drug somewhat remarkable powers. Dr. Clemens, to whose therapeutical observations not much weight can be attached, insists that it is a most valuable remedy in the treatment of acute pneumonia and of acute rheumatism. In these diseases he gives chloroform both by the mouth and by inhalation.

Dr. Stepp (*Münch. med. Woch.*, No. 8, 1889) was led, by the experiments of Salkowski on the disinfecting power of chloroform water, to try its effects in acute pharyngitis, diphtheria, whooping-cough, croupous pneumonia, and typhoid fever. Negative results were obtained in diphtheritic and in tubercular cases, although locally, as a gargle, chloroform water is very useful. In croupous pneumonia the results were satisfactory, and confirmed somewhat the claims of Clemens. Dr. Stepp particularly insists, however, upon the value of chloroform water in typhoid fever. The Berlin correspondent of the *Medical Age* writes regarding this point:

"The mode of application was fifteen drops of chloroform dissolved in five ounces of water, given in equal parts daily. The temperature was invariably found to sink in a few days so as to induce reconvalescence.

"But far more remarkable was the influence exerted by the chloroform treatment upon the sensory organs. Numbness, the specific typhoid face and expression, and hardness of hearing, disappeared under this treatment in three to four days; the patients grew lively and cheerful, and nothing short of an actual measuring of the temperature would have betrayed the presence of the insidious malady. The author ascribes this favorable influence of chloroform over the typhoid process, not to any disinfecting properties of the drug itself, but to the products of its chemical decomposition within the system."

The writer adds:

"In England chloroform is considerably used for internal purposes. The British Pharmacopœia has three preparations of it, viz.: Aqua chl. (1 to 200), spiritus chl. (1 to 20), and tinctura chl. comp. (2 to 8 spir. rect., 10 tinct. card. co.). The spiritus chl., particularly, is often used, in ten to sixteen drop doses, as a favorite adjunct to various mixtures, in view of its sedative, narcotic, and antispasmodic virtues. It is also used in England in malaria when quinine has failed."

Chloroform had been recommended long ago for fevers (*Medical Press and Circular*, 1854, vol. i., p. 114), and it has been tried without much success in cholera.

THE PATHOLOGY OF EXOPHTHALMIC GOITRE.

THE pathological changes upon which this interesting disease depends are so obscure that no one has been able hitherto to determine even in what part of the body they occur.

Observation has taught us that in all probability they are not located in the organs which are most prominently affected—the heart, the eyes, and the thyroid gland—but that their seat is some part of the nervous system. For a long time the theory most favored was that in the cervical sympathetic the essential changes would be found, but this part of the nervous system has so often been found healthy in this disease, and so often found affected when the symptoms of exophthalmic goitre were absent, that this view must be abandoned. Dr. White, Senior Assistant Physician to Guy's Hospital, publishes (*British Medical Journal*, March 30, 1889) a case in which he found, at post-mortem, very suggestive changes in the floor of the fourth ventricle.

The patient, a woman, thirty-one years of age, whose mother had died at the age of twenty-one of rheumatic fever, had had two attacks of "ulceration of the bowels," the last two years before the record begins. Since this last illness she had not been strong. For nine months she had been losing flesh. For ten days she had taken little food. She had had cardiac palpitations for many years, and goitre for twelve years. Eyeballs were slightly prominent, with Graefe's sign; optic disks normal; pulse 150; bowels regular, menses irregular, urine normal. In spite of treatment diarrhœa, jaundice, and pneumonia on the right side set in, and the patient soon died.

At post-mortem, very little fat on the body, but a normal amount in the orbits. Cervical glands slightly enlarged; thymus easily recognized but not enlarged; thyroid extremely enlarged uniformly. In lungs, confluent lobular pneumonia at both bases. Heart eleven ounces; no sign of microscopic fatty change. Stomach, large and small intestines all intensely congested, with swelling of the mucous membrane; the solitary follicles more prominent than usual. Liver, kidney, and suprarenal capsules normal; mesenteric glands all swollen and injected. The capillaries of the interior of the brain were everywhere full, especially *on the floor of the fourth ventricle*.

For microscopic examination, a series of sections was made, extending from the lowest part of the medulla to the corpora quadrigemina. At the level of the lower part of the olivary nucleus there was, just under the posterior surface of the medulla, evidence of slight inflammation, shown by engorgement of the vessels, blood being present in their sheaths, and by a few wandering cells in the posterior median nucleus on each side. The next few sections were healthy, but those near the nucleus of the sixth nerve showed considerable changes. Just under the posterior surface of the medulla, from the middle line to the restiform bodies, which were slightly involved, were numerous hemorrhages. The area occupied by these did not extend deeply, so that, except for a slight implication of the sixth nucleus on one side, the nerve-cells had escaped injury. Also, the fibres of the facial nerve, which approach the surface here, were free. The hemorrhages seemed almost entirely limited to the posterior superficial part of the reticular formation, but there were two or three small deeper ones. Though most marked at this level, they existed in all sections up to the lower part of the aqueduct of Sylvius, where, however, only one or two were seen. They always occupied the posterior part of the reticular formation. The hemorrhages were not old, but had not occurred immediately before death. The cervical sympathetic cord was quite healthy. In the superior cervical ganglia the nerve-cells were healthy, the sections were full of leucocytes.

The hemorrhages were visible to the naked eye, and none of those present at the examination had ever seen them so marked in the medulla.

Dr. White supposes that these hemorrhages occurred as a result of the pneumonic fever from which the patient suffered. He infers that, since the hemorrhages would naturally take place in that part of the central nervous system which was rendered weak by local disease-changes, they indicate the seat of the pathological processes which underlie the various symptoms of exophthalmic goitre—processes so subtile that they may not be, as yet, traced by the most careful microscopic examination.

A NEW BILL FOR THE COMMITMENT OF LUNATICS.—A bill providing a new mode for the commitment of lunatics has passed the State Legislature and is said to be now before the Governor for his signature. It contains several provisions which are of most questionable value. It throws the chief responsibility upon the judge, and offers to the supposed lunatic opportunity for jury trial. The bill will make the process of commitment very cumbersome and expensive, and it is to be hoped that it will not become a law until it has been amended. The present law is believed to act very well.

News of the Week.

DIFFICULT QUESTIONS TO ANSWER.—The following questions were asked at the recent examination of Bishop's case: "How can anyone tell that a post-mortem examination has been made before death?" "Is *rigor mortis* a sure sign of death?"

WHAT MAY OCCASIONALLY HAPPEN TO ONE WHO READS "THE RECORD" ON THE CARS.—An esteemed correspondent writes: "Before publishing any more cuts similar to the ones on page 593 of the last number of THE RECORD, please print 'warning' or 'danger' on the preceding page. Yesterday afternoon I started for New Haven, and stuck last week's RECORD in my pocket to read. Seated comfortably upon the lounge seat in the parlor-car, facing all the rest of the passengers, I began reading the paper systematically, and turning leaves gradually without looking ahead. While reading page 592, and holding THE RECORD straight up to get a good light over my shoulder, I noticed that a young lady seated about four feet away suddenly concentrated her attention upon THE RECORD. Supposing that she was simply trying to read the title I paid no attention, but kept on reading. Looking up again, I observed that all of the passengers within twenty feet of me were spellbound. I turned to the next page to see what was the matter, and was confronted by a series of yawning chasms. I got up calmly and went into the smoking compartment, and *stayed there*."

THE MIND-READER DIED IN A NATURAL WAY.—The sensational examination by the Coroner into the cause of death of the mind-reader, Bishop, has turned out as we expected it would. It will be recollected that it was charged that the gentlemen who made the examination of the body for pathological purposes did so before life was extinct, and that the subject was in a state of catalepsy. After a very thorough examination into the matter by the Coroner, both Drs. Ferguson and Irwin were duly exonerated. This was a foregone conclusion to the medical public, and amply justified by the reputation of the gentlemen concerned.

COMMENCEMENT WEEK AT YALE.—Professor H. C. Wood, M.D., of Philadelphia, will deliver the annual Address in Medicine at Yale University on Tuesday, June 25th, at 12 M.

A HOSPITAL FOR DARTMOUTH.—Mr. Hiram Hitchcock has given to Dartmouth College a hospital, which is to be attached to the Medical School of that institution. The plans for the new building are still in the hands of the architect, but it is expected that the structure will be completed within a year. The ground has been purchased in Hanover, and everything is now in readiness to proceed with the work as soon as the plans shall have been approved. Mr. Hitchcock was led to make this gift by an appreciation of its necessity and by a desire to establish a fitting memorial to his late wife, the hospital being given and accepted as such. It will be the handsomest and best equipped institution of the kind in Northern New England.

THE NEWPORT CITY COUNCIL has appropriated $300 for the entertainment of the American Medical Association next month.

DR. HOWARD KELLY, for a year connected with the department of obstetrics at the University of Pennsylvania, has been elected to the chair of obstetrics at Johns Hopkins University.

THE PROPOSED MEMORIAL TO THE LATE PROFESSOR MOSES GUNN.—The Alumni and Faculty of Rush Medical College, Chicago, have been for some time engaged in the effort to raise by subscription a fund for the purpose of erecting in the college building a bronze to serve as a memorial of the late Professor Moses Gunn.

THE MEDICAL SOCIETY OF NEW JERSEY will hold its next annual meeting in the Coleman House, at Asbury Park, on June 18 and 19, 1889, commencing at 4 P.M. of Tuesday, June 18th. President, H. Genet Taylor, M.D., Camden; Secretary, William Pierson, M.D., Orange, N. J.

A NEW CASE OF LEPROSY is reported to be at the Harlem Hospital in this city.

THE MAINE MEDICAL ASSOCIATION.—The thirty-seventh annual meeting will be held at Portland, on Tuesday, Wednesday, and Thursday, June 11th, 12th, and 13th.

DRS. HORTON AND WILLETTS, two physicians of Huntington, L. I., were arraigned at Jericho last week, charged by Dr. Watson, health officer of that town, with failing to report some cases of scarlet fever which they had been called to attend.

SUMMER HOTELS AND CIRCULAR DISTRIBUTORS.—The profession are now in the hands of the circular distributors, who are exhausting the arts of both the wood-engraver and rhetorician. The former usually perches his sanætarium upon the top of a wooded hill, fast by which flows a pearly stream, and the latter furnishes glowing word-pictures of earthly paradises where trout abounds.

SUIT FOR DAMAGES BY A MEDICAL AUTHOR.—Dr. Herbert Tibbitts has brought a suit against Messrs. MacMillan, the publishers, on account of an unfavorable review upon a work on massage written by Dr. Tibbits, and appearing in the pages of *Nature*. The surest way to prevent similar mistakes in future is to have authors write their own reviews.

PRELIMINARY PROGRAMME OF THE ASSOCIATION OF AMERICAN PHYSICIANS, to be held at the Army Museum Building, Washington, D. C., on September 18th, 19th, and 20th: 1. The President's Inaugural Address, Francis Minot, Boston, Mass. Discussions: 2. "The Relations between Chlorosis, Simple Anæmia, and Pernicious Anæmia, including Leucocythæmia and Hodgkin's Disease," *Referee*, Frederick P. Henry, Philadelphia, Pa.; *Co-referee*, F. Forchheimer, Cincinnati, O. 3. "The Relation of Rheumatism to Rheumatoid Arthritis," *Referee*, William Osler, Baltimore, Md.; *Co-referee*, M. Longstreth, Philadelphia, Pa. Papers: 4. "Primary Cancer of the Duodenum," by E. N. Whittier, Boston, Mass. 5. "Gastric Neurasthenia," by G. M. Garland, Boston, Mass. 6. "Chylous Effusion into Serous Cavities," by S. C. Busey, Washington, D. C. 7. "Etiology of Pleurisy especially in its Relation to Tubercular Disease," by A. A. Smith, New York. 8. "Thrombosis of the Cerebral Sinuses," by A. B. Ball, New York. 9. "The Early Stages of General Paralysis," by C. F. Folsom, Boston,

Mass. 10. "Tetany," by James Stewart, Montreal, Canada. 11. "Tetany and a New Theory of its Pathology," by John T. Carpenter, Pottsville, Pa. 12. "Migraine—Its History, Nature, and Treatment," by Wharton Sinkler, Philadelphia, Pa. 13. "Diseases Characterized by Loss of Consciousness and Coma," by Israel T. Dana, Portland, Me. 14. "Substitutes for Opium in Chronic Diseases," by J. F. A. Adams, Pittsfield, Mass. 15. "The Contagion of Diphtheria," by P. Gervais Robinson, St. Louis, Mo. 16. "The Bacillus Tuberculosis," by J. T. Whittaker, Cincinnati, O. 17. "How far may a Cow be Tuberculous before the Milk becomes Dangerous as a Food Supply?" by Harold C. Ernst, Jamaica Plain, Mass. 18. "A Supplementary Inquiry into the Frequency with which Lead is found in the Urine," by James J. Putnam, Boston, Mass. 19. "The Anatomical and Physiological Relations of Lesions of the Heart and Kidney," by H. F. Formad, Philadelphia, Pa. 20. "Specimens from two Cases of Cretinism," by W. F. Whitney, Boston, Mass.

More Malpractice Suits in California.—A short time ago Dr. Joseph Kurtz, one of the editors of the *Southern California Practitioner*, was the successful defendant in a suit for $21,000 in a case of alleged malpractice. Very recently, Dr. Walter Lindley, President of the State Medical Society, was sued for $20,000 on account of alleged malpractice.

A Large Family.—An enterprising Western newspaper, the *Arkansas Gazette*, has offered a prize to the largest family in the State, with the result of finding a Pike County couple who have had twenty-three children, of whom eighteen are still living. The prize-winners are Mr. and Mrs. W. D. Green, aged respectively seventy-seven and seventy-one years. The couple have seventy-two living grandchildren and twelve living great-grandchildren. Mr. Green, when married, lacked twenty five days of being twenty-three years of age, and at the time of the birth of his last child he was sixty-seven years, seven months, and fifteen days old. Mrs. Green, at the date of the birth of her first child, was eighteen years, four months, and six days of age, and at the time of her last child's birth she lacked eleven days of being sixty-two years old. The children were all born singly. The facts are certified to by an affidavit.

It is Said that Canon Wilberforce has been cured of a dangerous ailment by prayer and the anointing with oil, and that he has practically joined the ranks of the Peculiar People, or as they are called in this country, Faith-Healers.

The American International Congress of Medical Jurisprudence held its first meeting under the auspices of the Medico-Legal Society of New York, at Steinway Hall, this city, June 4, 5, 6, and 7, 1889, Lieutenant-Governor Edward F. Jones in the Chair. Addresses of welcome were made by Clark Bell, Esq., Hon. Chauncey M. Depew, Ex-Judge John F. Dillon, Ex-Judge Noah Davis, Hon. John S. Wise, Hon. John R. Fellows, Simon Sterne, Esq., Roger Foster, Esq., Moritz Ellinger, Esq. In the afternoon session of Tuesday, the following papers were read: "History of the Marsh Test for Arsenic and Modifications of the Same," by Professor R. O. Doremus; "Nouveau Procédé pour la Recherche des Cristaux de l'émine du Sang Humain," by Dottor C. Spadaro, Puglia, Italy; "The Medico-Legal Points in Case of State of Michigan vs. Matthew Millard," by Professor V. C. Vaughan, of Ann Arbor, Mich.; "Electrical Distribution," by Harold P. Brown, Esq., of New York City; "Sources of Error in Micro-measurements in Medico-Legal Cases," by William J. Lewis, M.D., of Hartford, Conn.; "Medico-Legal History of the Deschamp Case; Was it Rape, Insanity, or Murder?" by Y. R. Le Monnier, M.D., Coroner of New Orleans, La. The following subjects were introduced on Wednesday: "Criminal Responsibility in Narcomania," by Norman Kerr, M.D., of London; "Alcoholic Trance," by T. D. Crothers, M.D., of Hartford, Conn.; "License Laws," by Carl Horsch, M.D., of Dover, N. H.; "Drunkenness, its Influence on Morals," by T. L. Wright, M.D., of Belfontaine, O.; "Suicide," by William Lane O'Neill, LL.D., of New York; "The Legal Responsibility of the Criminal Insane," by Judge H. M. Somerville, of the Supreme Court of Alabama; "The True Legal Test of Responsibility of the Insane," by Judge M. W. Montgomery, of the Supreme Court, Washington, D. C.; "Feigned Insanity," by Connolly Norman, M.D., of Ireland; "Eccentricities of Insanity," by ex-Chief Justice Noah Davis, of New York City; "Volitional Insanity," by Austin Abbott, Esq., of New York City; "The Disposition to be made of Criminal Lunatics," by W. W. Godding, M.D., of Washington, D.C.; "Change of Character a Legal Criterion in Insanity," by C. H. Hughes, M.D., of St. Louis, Mo.; "The Criminal Insane," by Samuel Wesley Smith, M.D., State Commissioner in Lunacy of New York; "Separate Hospitals for Insane Convicts," by Clark Bell, Esq., of New York. On Thursday the following papers were read: "The Legal Aspects of Hypnotism," by Benno Loewy, Esq., of the New York Bar; "A Study of the Skulls of Criminals," by Frederick Peterson, M.D., of New York City; "Mental Epidemics," by Moritz Ellinger, Esq., of New York; "Some Forensic Features of Psychology," by Edward P. Thwing, M.D., of Brooklyn; "Freedom of the Will," by C. A. F. Lindorme, M.D., of Florida; "Philosophy of Criminal Law," by Rev. William Tucker, LL.D., of Ohio; "Power to Transmit and Record Language," by R. S. Guernsey, Esq., of the New York Bar; "The Abolition of the Coroner in Massachusetts," by Theodore H. Tyndale, Esq., of the Boston Bar. In the afternoon an excursion was enjoyed to the New York City Institutions for the Insane, as guests of the Commissioners of Charities and Corrections of the City of New York. The session continued during Friday, with the following papers: "Medical Expertism in the Old World," by A. Wood Renton, Esq., of London; "Expert Testimony in Homicide Cases," by Judge William H. Francis, of Dakota; "Medical Expertism considered from its Legal and Medical Standpoint," by T. Gold Frost, Esq., of the Minnesota Bar; "An Ideal Asylum for Insane in a new State," by Stephen Smith, M.D., of New York City; "Shall we have an American Penal Colony?" by H. S. Drayton, M.D., of New York City; "Live Birth in its Medico-Legal Relations," by Professor John J. Reese, of Pennsylvania; "Life Insurance," by Hon. Daniel Jordan, of Fredericton, N. B.; "Abortion," by a member of the Medico-Legal Society.

Society Reports.

THE ILLINOIS STATE MEDICAL SOCIETY.

Thirty-ninth Annual Meeting, held in Jacksonville, May 21, 22, and 23, 1889.

FIRST DAY, TUESDAY, MAY 21ST—MORNING SESSION.

THE Society was called to order by the President, CHARLES WARRINGTON EARLE, M.D., of Chicago, Ill., at 10 A.M., in the Young Men's Christian Association Hall.

The REV. A. B. MOREY offered prayer.

The address of welcome was delivered by City Attorney RICHARD YATES, son of the old war Governor.

The response, in the absence of Dr. B. F. Griffith, of Springfield, was made by DR. N. S. DAVIS, SR., of Chicago, which was listened to with rapt attention.

DR. T. J. PITNER, Chairman of the Committee of Arrangements, made a number of announcements, after which the President called for the

REPORT OF THE COMMITTEE ON REVISION OF THE CONSTITUTION,

DR. T. M. MCILVAINE, of Peoria, Chairman.

The report was discussed by Drs. Davis, of Chicago; Powell, of Collinsville; Herriott, of Jacksonville; Ingals, Earle, and Graham, of Chicago; Darrah, of Bloomington; Leeds, of Lincoln; Ensign, of Rutland; Hunt, of Dixon; Carter, of Waukegan; Barnes, of Bloomington; and Matthews, of Collinsville. The matter, on motion of Dr. Graham, was referred back to the same committee, with Drs. Davis and A. K. Van Horn, of Jerseyville, as additional members.

On motion the Society adjourned.

AFTERNOON SESSION.

The Society was called to order by the President.

DR. F. C. ROBINSON, of Wyanet, Chairman of the Committee on the Practice of Medicine, then made his report, which was followed by a paper on

THE TREATMENT OF PNEUMONIA,

by DR. GEORGE N. KREIDER, of Springfield.

Dr. Kreider said that during the past few years much had been written about the mortality of pneumonia. Men whose experience has extended for a long period of years affirm that the death-rate is much higher under the present accepted modes of treatment than it was forty years ago, when the pathology of this disease was almost unknown. He advanced the following conclusions: 1. That baths should only be given in those cases which are not progressing favorably. 2. In severe cases nothing is calculated to give so much relief to all bad symptoms. 3. Rules for selecting cases and administering baths cannot be rigidly given. The thermometer is not always a guide for their administration. Difficulty of respiration and lack of secretion should lead to its employment regardless of the height of the mercury. 4. The bath should be given at a temperature of 100° F. or less, depending on the severity of the case and the condition of the patient. Baths of extremely low temperature I have not found necessary as yet, but I should not hesitate to employ them if occasion should require. 5. Stimulants should be given just before entering and in coming out of the bath-tub. The patient should not exert himself in the least. 6. The physician should himself superintend and aid in giving the bath. This rule can only be broken by having trained nurses who are competent to meet emergencies which might arise. 7. The bath treatment is capable of shortening the duration of the disease and convalescence, and of reducing the mortality. Lebermeister says it has been reduced in his hands from twenty-five to ten per cent. The ice-coil will be found effective in the milder cases in reducing temperature and relieving pain, if placed directly on the affected side.

DR. J. M. G. CARTER, of Waukegan, said he had listened with interest to the papers. Anything which will tend to equalize the circulation in pneumonia would be beneficial. Whenever a hot or cold bath or local application will accomplish that purpose it is a good remedy. With regard to diphtheria, he had been unable to determine its contagiousness. In the treatment he used aconite to reduce temperature; belladonna to control the condition of the throat and to act as an anodyne, because most sore throats occurred in children. He gives them chlorate of potash mixed with sugar. He does not recommend gargles, except where they can be used easily.

DR. J. S. MILLER, of Peoria, had seen but two well-defined cases of diphtheria during the last three or four years. He would refer to one as "masked" diphtheria, because he treated the case three or four days before he was able to make a diagnosis, and it was only a few hours before the death of the patient that he was able to find out the true condition. The symptoms were those of fever, difficulty in breathing; unable to detect any lung trouble. A few hours before the death of the child he discovered diphtheritic membrane clinging to the throat. A great deal of attention should be paid to diagnosis in such cases. Relative to treatment, he was of the opinion that time is one of the most important factors. If we can gain time we do more toward guiding the case to a successful issue than by medication, and in order to gain time he favors the supportive plan of treatment. He does not believe in specifics in diphtheria. Iron, quinine, and whiskey should be given to prevent the destruction of tissue. One of the valuable local applications is ice, which, by acting on the tissues, produces contraction and hastens disintegration of the membrane. He had discontinued local applications to the throat entirely.

DR. W. M. BARRITT, of Onarga, in the treatment of diphtheria impresses the system as early as possible with some antiseptic, preferably the biniodide of mercury, it being more diffusible than some other forms; and in early childhood, where it is not possible to make applications locally, we must depend mainly upon constitutional treatment. Sulphurous acid, administered internally, gives good results.

DR. E. L. HERRIOTT, of Jacksonville, is satisfied with the old style of treatment in pneumonia. He commences with quinine and general supportive treatment; then applies a genuine fly-blister, and in connection with the blister he uses either the muriate or carbonate of ammonia, whichever he deems best.

DR. J. TOWNSEND, of Springfield, said that tepid applications were very beneficial in reducing the temperature in pneumonia. He had seen numerous instances in which the use of the coil in cases of puerperal fever and typhoid fever proved very beneficial, reducing the temperature from a dangerous point to one in which the patient passes along through the disease without danger from death. He had known Dr. Kreider to use cold applications in a great many instances with beneficial results.

As regards the matter of temperature, there is much irregularity. Cases, said the speaker, are on record where the temperature has reached 125°, which, in his opinion, were due to hysteria.

THE PRESIDENT said that if the statement of the last speaker were true—viz., that a temperature had been reached of 125° in the case of some patients of the Central part of the State, it would make physicians from the North feel a little dizzy.

DR. W. T. THACKERAY, of Chicago, said there was no question but that antipyrin reduces temperature rapidly; but the ill-effects upon the stomach and the depressing influence upon the nervous system lead physicians to question its value as an antipyretic. He discarded it very early, and has not given a dose of it in three years. He had never known it to maintain an excessively low temperature, say 96° or 97°. He would look upon it as an exception if it was maintained for any length of time. He had known Dr. Byrd, of Quincy, to use the cold pack with excellent results.

He was surprised to hear Dr. Townsend speak of a temperature of 125°, and life remain afterward. He had always been taught that a temperature of 109° was fatal, and if it got a few degrees beyond that the blood itself would become coagulated in the blood-vessels, and it would not be possible for life to continue. He would like to know where Dr. Townsend got his authority.

Dr. Kreider said the statement made by Dr. Townsend was absolutely correct, and could be found in Sagand's work entitled "Thermometric Observations." It could also be found in Wagner's "Pathology," a reprint from Sagand's book.

Dr. David Prince, of Jacksonville, would like to refer to the question of temperature in a briefer way, and how heat and cold act. The cold coil is applied to a patient with inflammation of the brain, and relief is afforded; a hot coil is applied, and there is relief, and afterward the patient is asked, "Which will you have?" And he says, "I will have the hot." The same application to the eye or ear affords relief. It is evidently not the amount of caloric heat abstracted from the body, but some local influence which is transmitted to some other centre which results in the contraction of the vessels in both instances.

With reference to the treatment of diphtheria, the best success he had ever seen was by the use of a spray of Lugol's solution. He had seen some remarkable recoveries from this spray. In an epidemic he had once used bromine in the same way, supposing it was a better antiseptic than iodine, but his practice did not bear out the anticipation.

Dr. A. J. Baxter, of Astoria, is in the habit of giving warm baths in pneumonia, also in cases of typhoid fever, alternated with cold, and he finds almost as much benefit from one as the other.

In regard to antifebrin and antipyrin, much depends upon the system as to the manner in which they should be used. In very nervous patients he is more cautious in administering them than in those of a robust constitution.

Dr. L. L. McArthur, of Chicago, said that the variety of abscess of the lungs which results from pneumonia is simply of a suppurative character, non-tubercular, and too frequently a diagnosis is not made. In addition to the treatment recommended by Dr. Robinson, it is now considered good practice to open such abscesses of the lungs and drain them, as in any other portion of the body.

The papers were further discussed by Drs. E. P. Cook, of Mendota, A. F. Lee, of Quincy, S. T. Hurst, of Greenview, and discussion closed by the essayists.

Dr. A. J. Baxter, of Astoria, read a paper on

DYSPEPSIA.

Dr. N. S. Davis, of Chicago, said he knew of a great many conditions of the digestive organs that go under the general designation of dyspepsia, but they were as diverse from one another as hot water is from an ice-pack. The only success he has in treating such cases is to analyze each case on its merits, and if he finds out the habits and pathological condition of the digestive organs and rationally adjusts his treatment accordingly, he finds generally but little difficulty in curing them.

The paper was further discussed by Dr. A. Wetmore, of Waterloo.

Dr. J. L. White, of Bloomington, read a paper entitled

HYGIENE AND DOCTORS' FEES,

which was discussed by Drs. Kreider, Davis, G. L. Eyster, of Rock Island, and closed by Dr. White.

Second Day, Wednesday, May 22d—Morning Session.

The report of the Committee on Diseases of Children was made by Dr. A. T. Darrah, of Bloomington.

Under the general term of

SUMMER COMPLAINT,

a very unscientific but common term, are grouped such diseases as diarrhœa, dysentery, cholera infantum, enterocolitis. Of the great mortality of children under the age of five years, vital statistics show that a large per cent. is caused by bowel diseases during the hot weather. This is especially marked in the larger cities of the Central and Southern parts of the United States. Philadelphia may be taken as an example. Here the mortuary records show that deaths from these causes are at a minimum during the months of December and January, and that during the months of July and August the maximum death-rate is reached.

Heat weakens by destroying the cohesive force between atoms. The result is a relaxed and flabby condition of the tissues. Continuous high temperature, acting upon the very delicate nervous organization of children, has the effect of either destroying the digestive ferment of the stomach, otherwise its natural secretion is arrested, normal digestion ceases, and the abnormal condition of fermentation may take its place. Heat being the prime factor in the causation, and acting through the sympathetic nervous system, we should counteract its effects, hence *cold* is the remedy. By reducing the temperature, the cause of the disease is removed. We should not wait for the little ones during warm weather to become sick, but begin the use of tepid bathing, cool or cold water. Use it freely, and let it be of a temperature suited to each individual case. If these suggestions were acted upon, and a more liberal use of the remedies at hand employed, the lives of many children would be saved.

Dr. A. E. Hoadley, of Chicago, said after an experience of twelve years in treating diarrhœa in infants he could speak of the utility of the treatment advocated by Dr. Darrah. In his practice he teaches families to keep the babies cool, and they do it in this way: Just as soon as they begin to feel the effects of heat, faces red, and heads tossing about, crying, etc., instead of giving them extra food of some kind, part of their clothing is removed; if it is excessively hot, they take off more. The children are then wiped down with tepid water, and allowed to lie on the floor naked, if sufficiently hot, and there they may remain all day. Toward evening, when the weather becomes cool, their clothing is put on. With this line of treatment the children had no diarrhœa, indigestion, or any trouble during the summer. He is rarely called to see a case of acute diarrhœa in infants during the summer.

Dr. Robinson, of Wyanet, called attention to the fact that many parents refused children water to drink when they have diarrhœa. He advocates giving them all the water they can possibly drink.

Dr. Baxter said that the diet was of as much importance as medicine in the treatment.

The treatment was further discussed by Dr. Davis, at great length.

Dr. W. T. Thackeray, of Chicago, presented his report as chairman of the Committee on Drugs and Medicines.

He said that among the most important introductions during the year is that of Professor Pribram, of Berlin—viz., *agaricine*, an alkaloid from the polypory officinals, white agaric, touch-wood, tinder from the torch-tree. This fungus was originally employed by Andral as a remedy against night-sweats, and has obtained some reputation in this direction in Europe. In America, however, the agaric was only used to a limited extent as a purge. It was early discovered that two distinct resins were contained in the fungus, one practically insoluble, and the other soluble in alcohol and chloroform, the product being a yellow crystalline powder and containing what medicinal virtue was possessed by the drug. From this principle Pribram isolated the alkaloid agaricine, and he epitomized his experience with it as follows: It always decreases the sweat; thirst and the excretion of urine are diminished under its use; the functions of the lungs and skin are not interfered with; it gives no after ill-effects.

Dr. Thackeray finds in his practice that it acts just as perfectly as stated by Pribram, in the dose of two milli-

grammes, not once only, but in several cases. He had other reports, however, where it was necessary to use as much as eight milligrammes before the effects were produced, but in all such cases success attended the administration.

A paper entitled "Notes on the Causes and Management of Hernia in Infants and Young Children," by DR. K. MILLER, of Lincoln, was read by DR. LEEDS, in the absence of the author.

The next thing in order was a paper on

VAGINAL HYSTERECTOMY,

by DR. H. T. BYFORD, of Chicago, which was read by DR. F. H. MARTIN, in the absence of the former.

Dr. Byford commences by saying that one of the greatest and most astonishing of the many triumphs of modern gynecological surgery is the development of vaginal hysterectomy. The death-rate of recent vaginal hysterectomies is about ten per cent., while that of some operators is even lower and steadily decreasing. The steps of the operation are as follows: 1. An incision is made through the vaginal wall extending in a circular direction two-thirds the distance around the cervix in front and at the sides; 2, separation of the parametric tissue from the uterus up to the uterine arteries at the side, and the bladder from the uterus in front until the peritoneum is reached; 3, completion of the circular incision behind the cervix; 4, opening the peritoneal cavity posteriorly and anteriorly; 5, ligation or clamping of broad ligaments, and severing them from the uterus; 6, tamponment of the vagina with iodoform gauze.

The speaker would favor giving vaginal hysterectomy a trial for all cases of uterine cancer, and particularly in cases discovered early, because it is chiefly in early cases we can expect to get beyond the disease and must make our best endeavor. In view of the diminishing death-rate he would perform the same operation for small fibroids which resist treatment and show a tendency to rapid growth, or produce incurable distressing symptoms. Occasionally cases of adenoma uteri, metrorrhagia, displacements, etc., may require the operation, not to cure a fatal disease but to relieve from a life of suffering and invalidism otherwise unavoidable.

DR. C. TRUESDALE, of Rock Island, read a paper on the

ETIOLOGY AND PATHOLOGY OF UTERINE DISPLACEMENTS.

He summarized his remarks as follows: 1. The normal typical position of the uterus in the pelvis, in an erect position of the body, instead of being upright is nearly horizontal. 2. Anteversions of the uterus, so-called, pathologically have no existence. 3. The body of the uterus is supported by the bladder, the bladder upon the vagina, the vagina upon the perineal septum as far back as the rectum, the neck suspended by the utero-sacral ligaments on a plane as high as the body with the empty bladder. 4. All ordinary displacements, such as prolapsus, anteflexion, retroversion, and retroflexion, are produced by contracture of the muscular walls of the vagina.

DR. FRANKLIN H. MARTIN, of Chicago, read a paper in which he reported

THREE CASES OF FIBROID TUMORS OF THE UTERUS OPERATED UPON BY APOSTOLI'S METHOD,

which illustrated the three different procedures of the method, viz.: 1. Intra-uterine galvano caustic—positive operation. 2. Intra-uterine galvano-caustic—negative operation. 3. The intra-vaginal galvano-puncture operation.

He also gave a short summary of results obtained by himself in a series of one hundred consecutive cases treated by Apostoli's method, which were as follows: 1. Of the hemorrhagic cases, ninety-five per cent. were cured of hemorrhage. 2. Tumors entirely disappeared in eighty per cent. 3. Tumors were reduced in size in seventy-eight per cent. 4. Tumors not affected in size, either from failure of treatment or from patients discontinuing treatment or for other reasons, fourteen per cent. 5. Neuralgic and other pains relieved in ninety per cent. 6. No deaths. 7. Symptomatic cures, sixty-eight per cent. (these sixty-eight not including the eight actual cures).

DR. L. L. MCARTHUR, of Chicago, read a paper on

UTERO-VAGINAL FISTULA, AND TREATMENT,

with report of a case. He emphasized some points in the technique of the operation, as follows: 1. Suturing in the longitudinal rather than in the transverse diameter of the vagina, because there is less contraction on the stitches and greater facility in introducing them. 2. Choice of sutures varies with many, though silk-worm gut has perhaps the preference—Sims, Bozeman, and Haegar preferring silver wire. Pippingsjeld claims excellent results from the use of alternate silver and iron wire, believing that the galvanic current thus induced plays an important part in the union. Excellent results are on record with silk as the suture. 3. Until Simon, who, perhaps, did more than any other operator to simplify the treatment, demonstrated that it was neither necessary to retain a catheter in the bladder after operation nor to maintain the reclining posture. He permits his patients to rise as soon as they feel disposed, simply requiring them to empty the bladder at least every two hours. 4. Render the urine aseptic by some such agent as saccharine benzoic acid, or boracic acid internally. 5. That if the first operation succeeds in locating the orifice of the fistula on the mucous surface of the bladder, that constitutes one step of some operators' methods, who then at a later sitting close the bladder opening. 6. That any colored liquid may be used to differentiate the fistula, as those above mentioned. 7. It is not necessary to put off the cure until the age of puberty is reached. 8. Encircle the orifice of the fistula with about one-quarter inch of mucous membrane. This serves to retain the ureter in the bladder and prevents by a valve-like action the escape of urine through the wound. 9. That the sphincter vesicæ in a congenital case has never been trained to its proper function and may need attention in the line of internal medication.

DR. ABBEY F. ROONEY, of Quincy, contributed a paper entitled

THE USE OF THE CURETTE IN PUERPERAL ENDOMETRITIS.

Whenever there is fever or pain, or fetor which points to this cause, the quickest and the surest way to abort the trouble is to carefully remove with a dull curette every easily detachable fragment. There need be no violence, and there should be no fear of consequences.

Dr. Rooney finds it more convenient to take advantage of Sims' position, steady the cervix with a tenaculum, bend the curette to that curve which allows it to pass the os internum most readily and find the irregular surfaces, and by this means roll out any tissue-fragments or dark clots that may be enclosed, for sometimes the cervix contracts down quite firmly, and the uterus, especially in miscarriages, appears flexed either forward or backward. After curetting she applies iodized phenol upon a cotton-wrapped applicator, which she regards as a valuable antiseptic and styptic. A Vienna physician had reported two hundred cases in which he had curetted for puerperal endometritis, with no deaths. She had never heard of such a record following the use of the uterine douche.

DR. CHARLES C. HUNT, of Dixon, read a paper entitled

CARBOLIC ACID, PURE OR IN CONCENTRATED SOLUTION, AS A DISINFECTANT IN THE TREATMENT OF PUERPERAL SEPTICÆMIA,

in which he said the following cardinal points are now generally admitted: 1. Puerperal septicæmia is of bacterial origin. 2. It is identical with surgical fever, but under exaggerated conditions. 3. It is pre-eminently infectious. 4. It is preventable.

During the spring of 1888 he had seen a great many interesting cases. He would limit what he had to say exclusively to the claims of carbolic acid, either undiluted

or in very strong solution, as a local application to the points through which diseased germs find their way into the system—namely, the lesions in the genital tract, and the interior of the uterus.

His clinical experience with undiluted or very strong solutions of carbolic acid tends to establish: 1. That it is not attended with danger. 2. That if applied early the temperature is immediately reduced. 3. That it is efficient as a disinfectant; no micro-organisms or spores can exist or develop where it touches. 4. That to apply it effectually and safely we must be guided by the sense of sight as well as that of touch.

EVENING SESSION.

DR. ROSA H. ENGERT, of Chicago, read a paper on the

RELATION OF UTERINE FIBRO-MYOMATA TO THE ORGANIZATION OF THROMBI.

In her opinion a fibroid is nothing more nor less than an organized giant thrombus. Wherever a hæmatoma happens to form, nature will try to bring life into the extravasated blood-coagula by organization. This may take place anywhere where there is sufficient vitality in the surrounding parts. The organs of generation in women, endowed by nature with extra-energetic vitality, are a fertile soil for the organization of these new formations.

To substantiate this hypothesis she then quoted from some of the latest researches in regard to the organization of thrombi. Welch, of Baltimore, writes: "In a thrombus of five minutes' existence blood-corpuscles were found, but in a state of degeneration. Leucocytes were already visible, although sparingly. Half an hour later they increased considerably in number. Fibrin appeared in from five to thirty minutes in the form of strips and islets between the blood-corpuscles and on the surface of the blood-coagula. Gradually it formed a net-work, and twenty-four hours from the beginning of the process a great part of the thrombus consisted of fibrin. Leucocytes seemed to wander about in the coagula, and the fibrin seemed to increase in proportion to the increase of these" (the leucocytes).

Heuknig holds that the "first process in the organization of a thrombus is the conversion of the blood into a fine granular mass, this being hyaline and striated. Canalization takes place from the line of demarcation on the border of the vessel-wall, proliferation of the endothelium begins, and gradually covers that part of the thrombus which does not adhere to the surrounding wall. Underneath this cover a layer of connective tissue develops. The endothelium begins to grow into the thrombus and capillaries are formed. Another set of capillaries develops from the vasa vasorum of the vessel in that particular thrombus which adheres to the vessel-wall. Gradually the connective tissue increases while the thrombus decreases."

Dr. Engert then reported some cases tending to substantiate the previously advanced statements.

DR. N. S. DAVIS presented a report on "Meteorological Conditions and their Relation to the Prevalence of Acute Diseases," which was followed by impromptu remarks on the subject of "writer's cramp" by Dr. D. R. Brower, of Chicago, during which he exhibited an appliance devised by Nussbaum.

THIRD DAY, THURSDAY, MAY 23D—MORNING SESSION.

DR. EDMUND ANDREWS, of Chicago, read a paper entitled

ONE HUNDRED OPERATIONS FOR STONE IN THE BLADDER.

He said the object of the paper is to compare the safety of litholapaxy with that of lithotrity and of lithotomy so far as his own practice is concerned. He had operated for stone over one hundred times, employing all the different methods in vogue.

The following is a summary of results: Litholapaxy (Bigelow's operation)—cases, 40; death, 1; mortality, two and a half per cent. Lithotrity (after Sir Henry Thompson's method)—cases, 6; death, 1; mortality, seventeen per cent. Lithotomy below age of puberty—cases, 55; deaths, 7; mortality, thirteen per cent. Lithotomy above age of puberty—cases, 29; deaths, 5; mortality, seventeen per cent.

In respect to the old form of lithotrity, his experience of one death in six operations is substantially like that of other surgeons. Litholapaxy can generally be performed only in adults. If we take the published statistics of adult lithotomy over the whole globe, amounting to some four thousand cases, the average mortality varies from twelve to eighteen per cent., while litholapaxy in Chicago—at least in his practice, forty cases—had a death-rate of only two and one-half per cent. The most remarkable success claimed for lithotomy comes from the warmer regions of Asia, where calculi seem to be very abundant.

The following are gathered from authentic sources: Baboo Ram Norain Das Bahadore, of India—cases, 248; deaths, 17; mortality, seven per cent. Dr. Kerr, American Hospital, China—cases, 187; deaths, 19; mortality, ten per cent. Dr. Nishnan Altoungan, Amasia, Asia Minor (educated at the American Mission)—cases, 265; deaths, 5; mortality, two per cent. Dr. Sewny, of Livas, Asia Minor—cases, 40; death, 1; mortality, two and one-half per cent. Total number of cases, 740; deaths, 42; mortality, six per cent.

DR. A. E. HOADLEY, of Chicago, read a paper on

TUBERCULAR JOINT DISEASE.

He said this is by far the most common joint affection in early life, as well as the most disastrous, which claims our attention. Tuberculous inflammations of joints are also characterized by the rapidity with which they run their destructive course. Three or four weeks is sufficient time for tubercular inflammation, if complicated with staphylococcus, to completely destroy all the elements of a joint—synovial membrane, ligaments, cartilages, bones—rendering the entire joint a chaotic mass which communicates with the outside by several openings. The disease may have its starting-point in the epiphyseal cartilage or in the synovial membrane, and in the bones themselves, but never in the articular cartilage or the articular ligaments. Both the latter are readily destroyed by infection. In seventy-seven per cent. of all cases, whether rapid or slow, the affection remains local; in the remainder the tuberculosis becomes general.

Dr. Hoadley emphasized the fact that early, thorough, and repeated aseptic operations is the treatment for this class of cases. There is at the present time but one fixed rule in regard to the kind of operation to be performed, and that is to remove all the diseased tissue, in whatever structure it may exist, and sacrifice nothing; that is, remove any healthy tissue, bone especially, that is unquestionably in the way and liable by its presence to interfere with obtaining the best results. Excision of joints in these cases, as a rule, is objectionable, because of the unnecessary amount of healthy bone removed; complete enucleation of the synovial membrane, together with such diseased portions of bone as may exist, gives the best results. The operation should be repeated as often as it becomes evident that the disease is still in progress.

DR. H. M. STARKEY, of Chicago, made the

REPORT OF THE COMMITTEE ON OPHTHALMOLOGY AND OTOLOGY.

He directed attention to the advisability of having the eyes examined in every case of persistent headache not relieved by the ordinary medical means, even when the eyes are not obviously at fault.

DR. GALEZOWSKY called attention to the close relation between some eye troubles and irritation of the upper teeth. The only new drug that seems to have met with any special favor is the antiseptic creolin.

Dr. Isadore Berrman recommends the use of lactic acid in from ten to thirty per cent. solution, for cases of chronic suppurative otitis that have resisted all other treatment.

Dr. Lyman Ware, of Chicago, read a paper on

SYPHILITIC CYCLITIS,

and reported several cases. He offered the following suggestions: 1. Greater care in the diagnosis of primary symptoms. However difficult it may be to diagnosticate primary or secondary syphilis, it is generally far more difficult to diagnosticate tertiary. It is much too common for a physician to say to his patient: "I do not think you have syphilis, but yet a little constitutional treatment will do no harm." 2. Mercury is unquestionably indicated in the primary and secondary stages, while potash in large doses is the remedy in the tertiary stage—and gummata certainly belong to the last. 3. Large doses of potash can only be tolerated when given in gradually increasing doses, preferably half an hour to an hour after meals, in much water; the freer the perspiration the larger the doses of potash.

OFFICERS FOR 1890.

President—Dr. John Wright, of Clinton; *First Vice-President*—Dr. J. P. Matthews, of Collinsville; *Second Vice-President*—Dr. T. M. Cullimore, of Jacksonville; *Permanent Secretary*—Dr. David W. Graham, of Chicago; *Assistant Secretary*—Dr. Lyman Ware, of Chicago; *Treasurer*—Dr. Thomas M. McIlvaine, of Peoria.

On motion the Society adjourned to meet in Chicago in May, 1890.

CONNECTICUT STATE MEDICAL SOCIETY.

Ninety-eighth Annual Meeting, held at Hartford, Conn., May 22 and 23, 1889.

FIRST DAY, WEDNESDAY, MAY 22D.

The meeting was called to order at 1 P.M. by the President, Dr. George L. Porter, of Bridgeport.

The Treasurer, Dr. W. W. Knight, reported a balance of $277.24 on hand.

ELECTION OF OFFICERS

resulted as follows: *President*, Dr. O. Brown, of Washington; *Vice-President*, Dr. Melancthon Storrs, of Hartford; *Treasurer*, Dr. W. W. Knight, of Hartford; *Secretary*, Dr. N. E. Wordin, of Bridgeport; *Delegates to the Meeting of the Pharmaceutical Association in* 1890, Drs. C. A. Lindsley, F. J. Young, and O. J. D. Hughes; *Delegates to American Medical Association*, Drs. F. H. Wiggins, M. Storrs, M. A. Cremin, R. S. Goodwin, W. Cummings, J. Olmstead, C. N. Allen, E. T. Bradstreet, F. L. Smith, and William Winter. Delegates were also appointed to attend the meetings of the State Societies of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, New York, and New Jersey.

The Committee on Matters of Professional Interest for 1890 are Drs. Henry Fleischner, C. H. Beach, and F. D. Edgerton. Dissertator, Dr. W. G. Bronson.

Dr. E. M. Moore, of Rochester, was elected an honorary member. The name of Professor William H. Welch, of Baltimore, was proposed, and according to custom was laid over for one year.

At 3.30 P.M. the Society adjourned to hold its annual banquet.

In the evening a reception was tendered to the members at the residence of Dr. W. A. M. Wainwright.

SECOND DAY, THURSDAY, MAY 23D.

The Secretary, in his report, showed the present membership to be five hundred and eight; there had been thirty-two new members admitted during the year.

Dr. L. B. Almy, Chairman of the Committee on Matters of Professional Interest, read the

REPORTS OF PHYSICIANS FROM VARIOUS PARTS OF THE STATE,

giving their experiences with antipyrine, antifebrine, phenacetine, sulfonal, and saccharine. The results with the above drugs were very similar to those which have been published in The Medical Record for the past two years.

Dr. P. H. Ingalls, of Hartford, read a paper on

UTERINE CANCER.

He placed no faith in the hereditary theory. The importance of early diagnosis was urged and the unsparing use of the knife was advised. He said the theory of local origin was becoming more prominent, but the pathology is very uncertain. He thought that possibly some time a germ might be isolated as the cause of cancer. The generally accepted causes are age, childbirth, and injuries. He quoted Thomas as saying that he never knew a case in a woman who had never been pregnant. He described the symptoms, and thought where there was the least doubt that the microscope should be called to aid. The treatment was purely surgical, but there was no hope if the disease had extended beyond the uterine tissue, and operation only increased the inflammation. He recommended good hygienic surroundings and good living, opium for pain, and a solution of permanganate of potassium for stinking discharges. He explained, and gave a history of, the different operations. Vaginal hysterectomy was, in his opinion, the proper operation.

Dr. F. E. Beckwith, in the discussion that followed, thought that either with the ligature or clamp there might be injury to the tissues that would cause sloughing, and thus expose the patient to dangers of septic complications.

Dr. J. G. Holmes read a paper on

SCARLET FEVER,

in which he showed himself to be thoroughly conversant with the disease, but offered nothing new.

Dr. Seth Hills read a paper entitled

PHTHISIS PULMONALIS.

He spoke of the contagious character of phthisis, and claimed that no one had the disease without taking it from some outside source. It was time, he said, for the medical profession to take some decisive action in regard to tuberculosis. Why was the typhoid-fever germ hunted to its death and the germ of consumption, that most widespread of germ diseases, allowed to go scot-free? The time will soon come, he predicted, when the consumptive patient will be isolated from healthy subjects.

PRESIDENT'S ADDRESS.

The President then delivered his address, in which he gave greeting to the members present and reminded them that to the present membership is transmitted the responsibility of perpetuating the prosperity of the Society. He said the most important medical event of the year had been the Congress in Paris for the study of tuberculosis, at which, after papers had been read and discussions engaged in, it was concluded that consumption was possibly, and even probably, contagious. He spoke of the opposition of ignorant people to medical interference against the spread of contagious diseases. He thought that to explain this opposition opened a wide field to the faithful student of psychology. Sickness is a factor of political economy. To decrease or alleviate sickness is an act of statesmanship. The State ought to enact laws in regard to health and sickness. Considering that our prosperity is dependent upon the common people, the conclusion is logical that no other nation is so dependent upon the health and character of its people. To how great an extent does health contribute to the success of a nation? A nation rises in greatness only as long as the people are healthy. Public health is public wealth. Sickness comes,

and the laborer becomes a burden. The approximate amount of wages for a laborer is $1.50 per day, and cost of sickness is at least $1 a day. On June 1, 1880, by statistics and computation, there were about one hundred and fifty-nine thousand people over fifteen years of age sick, and about one-quarter of that number of children. This would be a loss of about three hundred and ninety-two million dollars per year, and if a pestilence swept the land it would be vastly greater. It is now recognized that small-pox is preventable, and Boards of Health are organized for public good; yet the public ask, Does it pay? They are obliged to accept the balance-sheet of facts. The question of the future is how to prevent disease. The key to the situation is to be found in the laboratory, not in the sick-room.

Essays were read by Dr. G. H. Jenkins on "Pollution of Sources from which Water and Ice Supplies are Taken;" by Dr. C. B. Newton on "Fractures, with Suggestions as to Counter-extension and the Adapting of Splints;" and by Dr. J. F. Calef on "Chronic Pachymeningitis Interna."

The meeting adjourned at 5.15 P.M., to meet in New Haven, May 28, 1890.

New Instruments.

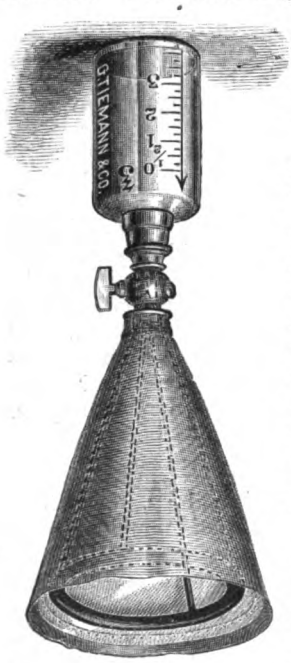
A NEW ANÆSTHETIC INHALER.

By HENRY FLOOD, M.D.,

ELMIRA, N. Y.

THE inhaler consists of two principal parts, a cone and a bottle to hold the anæsthetic.

The cone is made of a soft rubber ring, five inches in diameter. The rubber ring is soft, and will not injure or be uncomfortable for the patient. It is pliable enough, when slight pressure is used, to adapt itself to the contour of the face.



To the rubber ring four steel wires are fastened, equal distances apart. The wires are five and a half inches long. The other ends of these are soldered in a metal ring which is three-quarters of an inch in diameter. The metal ring makes the apex of the cone. This forms a spring frame that always takes the form of a cone. If the cone is pressed together, as when caught by a patient, as soon as the pressure is removed the frame will spring back into its original shape.

It requires only a minute or two to pin a towel around the frame, which should be done with safety-pins, or, what is more convenient, I have made a hood of towelling which fits the cone. The hood is easily pulled over the frame and pinned at the base of the cone.

To prevent air passing through the meshes of the towelling there is a second hood, made of soft rubber cloth. The rubber hood is pulled over the towelling. The rubber hood is longer than the cone, leaving a free border of an inch or more which lies on the face. During inspiration the rubber cloth acts as a valve and prevents air from rushing under the cone. When the cone and rubber hood are pressed tightly to the face air can be entirely excluded from the cone. When it is desired that air should enter the cone, it is only necessary to pull up the rubber hood, and air will pass through the meshes of the towelling.

The ring at the apex of the cone has threads cut into it to screw the cork of the anæsthetic bottle into the cone. The metal cork also screws into the anæsthetic bottle. The metal cork has a stopcock to turn off or on the anæsthetic. Through the cork are two holes which pass through the bottle-end and through the stopcock, where each of the two holes divides and turns so as to open at the lower edge of the cork, thus distributing the anæsthetic, which passes through the cork in four directions, and throws it inside of the cone against the towelling.

A small piece of absorbent cotton, pushed into the apex of the cone, will prevent the anæsthetic from dripping into the patient's face.

The anæsthetic bottle holds four fluid ounces and is graduated so that at any time the amount of anæsthetic that has been used in the cone may be known. When the bottle becomes empty it is easily unscrewed, refilled, and replaced without removing the cone from the face.

The inhaler is easily taken apart and cleaned, the soiled towel or hood is to be thrown aside to be washed, and a clean one is to take its place; the frame and bottle should be washed, and each part of the inhaler can be treated with an antiseptic fluid. This is a very important feature when practising antiseptic surgery, especially in operations about the face and neck.

I have used some inhalers made for me by George Tiemann & Co., and my experience with them has proved very satisfactory.

The anæsthetic can be given as rapidly or as slowly as desired. The stopcock gives absolute control over the quantity put into the cone, and prevents a large amount of waste, requiring one-fourth to one half as much as is generally used. I have produced complete anæsthesia with chloroform in less than three minutes, and with ether in from four to seven minutes. I have kept patients anæsthetized undergoing capital operations, for nearly an hour, using less than a fluid ounce of chloroform; and in severe and painful operations for forty-five minutes, with less than four fluid ounces of ether.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 26 to June 1, 1889.

BILLINGS, JOHN S., Major and Surgeon. By direction of the Secretary of War is authorized to make, in connection with his duties as Supervisor of Mortality and Vital Statistics of the Eleventh Census, such journeys as may be ordered by the Superintendent of the Census, provided that, in each case, the approval of the Surgeon-General shall be obtained; and provided further, that the journeys shall involve no charge against the Fund for Transportation of the Army. Par. 12, S. O. 122, A. G. O., May 27, 1889.

BROWN, PAUL R., Captain and Assistant Surgeon. By direction of the Secretary of War, leave of absence for six months on account of sickness is granted. Par. 13, S. O. 122, A. G. O., May 27, 1889.

WILSON, GEORGE F., Captain and Assistant Surgeon. His resignation was accepted by the President, and took effect May 31, 1889.

FISHER, WALTER W. R., Captain and Assistant Surgeon. The leave of absence for one month granted by S. O. No. 30, C. S., Department of California, is extended fifteen days. Par. 3, S. O. 37, Headquarters Division of the Pacific, San Francisco, Cal., May 22, 1889.

RAFFERTY, OGDEN, First Lieutenant and Assistant Surgeon. Ordered with troops for field practice to Galveston, Tex., where troops will camp for such time as may be hereafter directed. Par. 1, S. O. 29, Headquarters Department of Texas, San Antonio, Tex., May 13, 1889.

GLENNAN, JAMES D., First Lieutenant and Assistant Surgeon. By direction of the Acting Secretary of War, is relieved from duty at Willet's Point, N. Y., to take effect June 1, 1889, and will proceed to Fort Riley, Kan. Par. 5, S. O. 121, A. G. O., May 5, 1889.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending June 1, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	10	2
Scarlet fever	162	28
Cerebro-spinal meningitis	2	2
Measles	96	5
Diphtheria	131	30
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

REPORT ON THE PREVENTION OF TUBERCULOSIS TO THE BOARD OF HEALTH OF NEW YORK CITY.—The disease known as tuberculosis, and when affecting the lungs, as pulmonary tuberculosis (consumption) is very common in the human being and in certain of the domestic animals, especially cattle. About one-fourth of all deaths occurring in the human being during adult life is caused by it, and nearly one-half of the entire population at some time in life acquires it. The disease is the same, in nature, in animals and in man, and has the same cause. It has been proven beyond a doubt that a living germ, called the tubercle bacillus, is the cause and the only cause of tuberculosis. It does not seem necessary to state the facts upon which this assertion is based, for the observation first made by Robert Koch, in 1882, has been confirmed so often and so completely, that it now constitutes one of the most absolutely demonstrated facts in medicine. Tuberculosis may affect any organ of the body, but most frequently first involves the lungs. When the living germs find their way into the body they multiply there, if favorable conditions for their growth exist, and produce small new-growths or nodules (tubercles) which tend to soften. The discharges from these softened tubercles, containing the living germs, are thrown off from the body. In pulmonary tuberculosis these discharges constitute, in part, the expectoration. The germs thus thrown off do not grow outside the living human or animal body, except under artificial conditions, although they may retain their vitality and virulence for long periods of time, even when thoroughly dried. As tuberculosis can only result from the action of these germs, it follows, from what has just been said, that when the disease is acquired, it must result from receiving into the body the living germs that have come from some other human being or animal affected with the disease. It has been abundantly established that the disease may be transmitted by meat or milk from tubercular animals. The milk glands in milch-cows often become affected with the disease when their lungs are involved, and the milk from such animals may contain the living germs and is capable of producing the disease. Among stall-fed dairy cows twenty or thirty per cent. are sometimes found to be affected with the disease. Tubercular animals are also frequently killed for food; their flesh sometimes contains the germs, and, if not thoroughly cooked, is capable of transmitting the disease. Boiling the milk or thoroughly cooking the meat, destroys the germs. Although the meat and milk from tubercular animals constitute actual and important sources of danger, the disease is acquired, as a rule, through its communication from man to man. Tuberculosis is commonly produced in the lungs (which are the organs most frequently affected) by breathing air in which the living germs are suspended as dust. The material which is coughed up, sometimes in large quantities, by persons suffering from consumption contains these germs, often in enormous numbers. This material when expectorated frequently lodges in places where it afterward dries, as on the streets, floors, carpets, clothing, handkerchiefs, etc. After drying, in one way or another, it is very apt to become pulverized and float in the air as dust. It has been shown experimentally, that dust collected from the most varied points, in hospital wards, asylums, prisons, private houses, etc., where consumptive patients are present, or have been present, is capable of producing tuberculosis in animals when used for their inoculation. Such dust may retain for weeks its power of producing the disease. On the other hand, dust collected from rooms in institutions or houses that have not been occupied by tubercular patients, does not produce the disease when used for the inoculation of animals.

These observations show that where there are cases of pulmonary tuberculosis, under ordinary conditions, the dust surrounding them often contains the tubercle bacilli; and persons inhaling the air in which this dust is suspended may be taking in the living germs. It should, however, be distinctly understood that the breath of tubercular patients, and the moist sputum received in proper cups, are not elements of danger, but only the dried and pulverized sputum. The breath and moist sputum are free from danger, because the germs are not dislodged from moist surfaces by currents of air. If all discharges were destroyed at the time of exit from the body, the greatest danger of communication from man to man would be removed.

It then follows, from what has been said, that tuberculosis is a distinctly preventable disease. It is a well-known fact that some persons, and especially the members of certain families, are particularly liable to tuberculosis, and this liability can be transmitted from parents to children. So marked and so frequent is this liability, and so frequent is the development of the disease in particular families, that the affection has long been considered hereditary. We now know that tuberculosis can only be caused by the entrance of the germ into the body; and that this transmitted liability simply renders the individual a more easy prey to the living germs, when once they have gained entrance. The frequent occurrence of several cases of pulmonary tuberculosis in a family is, then, to be explained, not on the supposition that the disease itself has been inherited, but that it has been produced after birth by transmission directly from some affected individual. Where the parents are affected with tuberculosis the children, from the earliest moments of life, are exposed to the disease under the most favorable conditions for its transmission, for not only is the dust of the house likely to contain the bacilli, but the relationship also between the parents and children, especially between the mother and the child, are of that close and intimate nature especially favorable for the transmission by direct contact. If, then, tuberculosis is not inherited, the question of prevention resolves itself principally into the avoidance of tubercular meat and milk, and the destruction of the discharges, especially the sputum, of tubercular individuals. As to the first means of communication, those measures of prevention alone answer the requirements which embrace the governmental inspection of dairy cows and of animals slaughtered for food, and the rigid exclusion and the destruction of all those found to be tubercular.

For the removal of the second means of communication, *i.e.*, the sputum of tubercular individuals, the problem is simple when the patients are confined to their rooms or houses; then wooden or pasteboard cups with covers should always be at hand for the reception of the sputum. These cups are supported in simple racks, and at least once daily, or more frequently if necessary, should

be removed from the racks and thrown with their contents into the fire.[1]

The disposition of the expectoration of persons who are not confined to their rooms or homes is a far more difficult problem. The expectoration certainly should not be discharged on the street, and the only practicable means for its collection seems to be in handkerchiefs, which, when soiled should at the earliest possible moment be soaked in a solution of five per cent. of carbolic acid, and then boiled and washed. Handkerchiefs thus soiled are exceedingly dangerous factors in distributing tubercle bacilli, for when the sputum becomes dry it is easily separated in flakes from the cloth, and then soon becomes pulverized and suspended as dust.

It becomes evident, from what has been said, that the means which will most certainly prevent the spread of this disease from one individual to another are those of scrupulous cleanliness regarding the sputum. These means lie largely within the power of the affected individual. It is, furthermore, to be remembered that consumption is not always, as was formerly supposed, a fatal disease, but that it is in very many cases a distinctly curable affection. An individual who is well on the road to recovery may, if he does not with the greatest care destroy his sputum, diminish greatly his chances of recovery by self-inoculation. While the greatest danger of the spread of the disease from the sick to the well is in private houses and in hospitals, yet, if this danger is thoroughly appreciated it is, for the most part, quite under control, through the immediate destruction of the sputum, and the enforcement of habits of cleanliness. But in places of public assembly, such as churches and theatres, particularly the latter, the conditions are different, and the safety would seem to depend largely upon a dilution and partial removal of the floating, and possibly dangerous, dust by means of adequate ventilation. Rooms in private houses and hospital wards that are occupied by phthisical patients should from time to time be thoroughly cleaned and disinfected, and this should always be done after they are vacated, before they are again occupied by other individuals. Steamship companies should be obliged to furnish separate apartments for consumptive persons, so that no person in the exigencies of travel need be forced to share his room with one who might be a source of active danger to him.

We desire to especially emphasize the following facts: 1st, That tuberculosis is a distinctly preventable disease; 2d, that it is not directly inherited; and 3d, that it is acquired by the direct transmission of the tubercle bacillus from the sick to the healthy, usually by means of the dried and pulverized sputum floating as dust in the air.

The measures, then, which are suggested for the prevention of the spread of tuberculosis are: 1st, The security of the public against tubercular meat and milk, attained by a system of rigid official inspection of cattle; 2d, the dissemination among the people of the knowledge that every tubercular person may be a source of actual danger to his associates if the discharges from the lungs are not immediately destroyed or rendered harmless; and 3d, the careful disinfection of rooms and hospital wards that are occupied, or have been occupied, by phthisical patients. Signed, HERMANN M. BIGGS, T. MITCHELL PRUDDEN, HENRY P. LOOMIS, Pathologists to the New York City Health Department.

Resolved, That Drs. T. M. Prudden, H. M. Biggs, and H. P. Loomis, the Pathologists of this Department, be and are hereby requested to formulate a brief and comprehensive statement regarding the contagiousness of tuberculosis in man, stating therein the evidence of the same, and recommending in the briefest possible manner practicable the simplest means of protection from its influence.

[1] A cheap and efficient cup answering this purpose is now on the market, and is supplied by the druggists.

A REMARKABLE INSTANCE OF FECUNDITY.—A woman in Edinburgh, Scotland, is pregnant at the age of sixty-two, it being her twenty-third time. She was also pregnant at the age of 47, 49, 51, 53, 56, and 60. The case is attracting much attention from the physicians of that place.—*Gaillard's Medical Journal.*

FORMULAS FOR THE TREATMENT OF CHILBLAINS.—

℞. Chlorid. meth..... ʒ ij.
Cocaine hydrochlor..... gr. viij.
Lin. camph. co..... ʒ iij.
Lin. saponis..... ʒ v.
M.

℞. Lin. belladonnæ..... ʒ ij.
Lin. aconiti..... ʒ j.
Acidi carbolici..... ♏ vj.
Collod. flex.....ad ℥ j.
M.

℞. Ol. ricini,
Collod. flex.,
Spt. terebinth.....āā ʒ iv.
M.

℞. Spirit. camph.,
Tinct. opii.....āā ʒ ij.
Acid. carbol..... gr. xl.
Spir. vini..... ʒ iv.
Aquæ..... ʒ iv.
M.

THE CZAR'S PHYSICIANS.—The health of the Czar is well looked after, if we may judge from the large staff of physicians and surgeons which is attached to the Russian court. The following comprises the list of the medical department: Three consulting physicians; ten honorary physicians; two surgeons, each of whom is paid; and three honorary surgeons; three accoucheurs, each of whom is paid; two ophthalmic surgeons; one physician for diseases of children; four practitioners for attendance upon the household, the posts of which are honorary; and lastly, one dentist.—*Medical Press and Circular.*

HEREDITARY PLUMBISM.—A detailed account of hereditary lead-poisoning in a baby has been brought forward by MM. Legrand and Winter. Both father and mother had been deeply poisoned. Five of their children had been born dead. The sixth lived only fifteen days. At the necropsy some remarkable signs were noticed. The kidneys were very small, weighing less than a drachm, granular, and sclerosed throughout. The liver showed universal circumlobular cirrhosis, with islands of fatty degeneration in the periphery of the lobules. Throughout this circumlobular fibrous tissue a solution of ammonium sulphide gave an abundant precipitate of fine black grains within the cells, which was slowly dissolved by acetic acid. The liver weighed nearly two ounces, and contained about three per cent. of lead.—*The Practitioner*, April, 1889.

THE FRENCH HOSPITAL.—The growth of the French Benevolent Society, which was founded in 1809 and incorporated in 1819, has afforded an interesting story of progress. At first a medical department was started, and the doctors visited among the French poor of the city. In 1883 a "hospice" was established in Fourteenth Street, which afforded a resting-place for the aged and infirm. This work grew rapidly and a hospital was developed. Funds were raised by French societies in different parts of the United States, and not long ago new quarters were obtained at No. 322 West Thirty-fourth Street. The hospital was enlarged from twenty-two to sixty beds, a pathological department was added, and the work was extended in every department. Efforts have been made to raise funds for a new operating-room and an outfit of surgical instruments, with some degree of success. Perhaps the Society will make a very good showing on the coming July 14th, the anniversary of the taking of the Bastile.

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ANTIRABIC INOCULATIONS AN UNSCIENTIFIC METHOD IN THE PREVENTION OF HYDROPHOBIA.

BY JOSEPH DRZEWIECKI, M.D.,

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THE question as to the efficacy of Pasteur's method of prevention of hydrophobia has been subjected to considerable criticism, and from time to time voices of scientific men have been heard in opposition, the greatest objections coming from Frisch, Ullman, and Peter.

Although Pasteur replied to Frisch's objections, yet his answer was very feeble and unsatisfactory.

From Pasteur's whole defence the most characteristic argument is addressed to Professor Peter, *i.e.*, that he cannot dispute with incompetent persons, as Peter had never made experiments. The *France Médicale*,[1] noticing this fact, remarked that with similar arguments it was difficult to convince anybody, and that now we live in a strange time when the chemist — experimentator and not the physician—categorically accuses the professor and clinicist as incompetent in justifying the therapeutic methods.

The only argument which Pasteur always states in favor of his method is the statistics of inoculations. However, as we shall show further on, it cannot be considered as scientific, and therefore it cannot be seriously treated.

The editor of the *Journal de Médecine de Paris* showed upon what a weak basis Pasteur supported his statistics, and if they were seriously treated we should receive a greater percentage of mortality.

The English Commission had personally inquired into 90 cases treated by M. Pasteur, but only 24 of these were said to have been bitten by undoubtedly rabid dogs, so that the 8 fatal in this number were far in excess of the usual proportion of fatalities in cases of bites of rabid dogs, viz., five per cent. The report had reckoned that of the 2,682 cases treated at the Pasteur Institute the mortality should have been 130 instead of 40; but it ought to have been stated that only 233 of the cases were found to have been bitten by rabid animals, which would have given a mortality of only 15 if untreated. M. Lutaud contended that the Pasteurian method had increased the mortality instead of diminishing it. Before its adoption the annual average mortality in France was 30. The actual mortality in France during 1886 was 42, of which 25 had been treated by Pasteur.[2]

As Pasteur defends his method by statistics, let us cite other statistics. Dr. Kishensky[3] states cases, selected from the archives of the Katharine Hospital in Moscow. The whole number of cases amounted to 693, and from this number, excluding cases bitten by other animals, 591 were bitten by mad dogs, and there died only 8, or 1.35 per cent. But the author asserts that in this manner statistics cannot be treated, because about many of the cases it was not known whether they had been bitten by rabid dogs, and therefore omits all such cases and gives only those about which there was no doubt of their having been bitten by unquestionably rabid dogs. Some of them remained in the hospital under medical observation during at least six weeks, but the greater part of them three months and longer.

According to these statistics it is shown that out of 307 persons bitten by unquestionably rabid dogs, 18 were bitten in the head, 90 in the hands, 25 in the feet, 170 in places covered with clothes, and 4 in places not indicated. Of 18 bitten in the head 4 died, or 22.2 per cent.; of 90 bitten in the hands, 2 died, or 2.2 per cent.; of 25 bitten in the feet, no death, and of 170 bitten through the clothes, 1 only died, or 0.59 per. cent. If we add to the deaths another, belonging to the 4 about whom it is not known where they were bitten, we have 8 deaths, or 2.6 per cent.

Out of 24 cases severely bitten by rabid wolves, 2 arrived at the hospital with the symptoms of hydrophobia; 5 were in the hospital only during six weeks, 4 of them were discharged in good health, and 1, very severely bitten, died of septicæmia. The remaining 17 cases were under observation during eight weeks. Of this number 11 were bitten in the head, 3 in the hands, and 3 in places not indicated; 5 of them died, showing a mortality of thirty per cent., but, according to Pasteur, it is eighty-two per cent. All those who died had extensive wounds on the head. The author concludes that a greater number of persons died from the bite of wolves than from that of dogs, because the wounds of the former are larger and more numerous. Of 18 cases bitten by rabid cats only 3 died. Of 17 cases bitten by rabid horses, 9 were in the hospital during three months, and none of them died of hydrophobia, but 1 died of erysipelas and another of septicæmia. Of 4 bitten by a rabid hog, none fell ill. To this number we must add 4 cases bitten by rabid men, 1 by a white bear, and 1 by a rabid squirrel. Thus of the whole number bitten by rabid animals—396—there died 18, or 4.52 per cent.

If we now consider that in Pasteur's statistics are included many cases improved,' and if to this we add the cases given by Professor Peter, of which one died, as Peter asserts, in consequence of the antirabic intensive inoculations, and another died from rabies two years and three months after the antirabic treatment, we arrive at the conviction that the Pasteurian method has no value.

In order to accept the method of preventive inoculations as valuable, it is necessary to prove that it prevents the development of hydrophobia in men. Pasteur only proved that his method prevents the development of rabies in dogs. Still, the experiments made in this direction by Dr. Frisch do not demonstrate the value of the inoculations, and Pasteur explains the unsuccessful results of Frisch by the fact that the latter transferred the experiments from dogs to rabbits.

But if it is erroneous to transfer the experiments from dogs to rabbits, it is still more so to transfer them to men, as Pasteur does. Until now he has not yet proved that the inoculations prevent hydrophobia in men. The whole series of fatal cases treated in his Institute prove just the contrary.

1. On April 1st of last year a soldier of the name of Marinot, inoculated at the Pasteur Institute, died from rabies at Val-de-Grace.

[1] July 7, 1888.
[2] Vide Lancet, July 30, 1887, p. 235.
[3] Vratch, Nos. 44 and 45, 1887.

[1] France Médicale and Union Médicale (January 6, 1887) published a letter of Dr. Ziegel, in which he writes that ten soldiers bitten by a dog, suspected to be mad, were sent for treatment to Pasteur. After their return to Wilna, they found the dog that had bitten them in a perfect state of health, and five months afterward the soldiers and the dog were quite well.

2. On May 16th a young man (Poulet), aged twenty, died at the Hôtel Dieu Hospital from rabies. He had been bitten by a mad dog on December 6, 1887, and was treated at the Pasteur Institute from December 8, 1887, to January 6, 1888.[1]

3. O—— died from rabies, bitten on April 23d, and inoculated from April 26th to May 12th last year.[2]

4. On August 8th a young man named Guers, aged twenty-two, died at the Necker Hospital at Paris from convulsive rabies. He had been bitten by a mad dog on July 13th, and was treated at the Pasteur Institute from the 16th.[3]

5. On June 20th a child (Bertin), eighteen months old, died from rabies at Gentilly (Seine). The child, who had been bitten on May 15th, was inoculated at the Pasteur Institute on the 17th, and the treatment was continued for twenty-four days. The first symptoms became manifest about the eighth day after the completion of the treatment by antirabic inoculations.[4]

6. On July 23d a man, aged twenty-eight, died of rabies at the Hôtel Dieu of St. Étienne. He had been bitten by a rabid cat on June 16th, and was treated at the Pasteur Institute from June 20th to July 7th.

7. A child, at Marseilles, thirty-one months old, who was bitten on May 9th by a rabid dog, and treated at the Pasteur Institute from May 14th to June 9th, died from rabies on June 23d.

8. An inhabitant of Chatenay, aged forty-four, who was bitten on March 25th by a rabid cat, and treated at the Pasteur Institute from March 26th to April 12th, died from rabies on July 30th.

9. Madame Sarazin, of Saint-Maurice, in Switzerland, aged forty-four, who was bitten on July 1st by a mad dog, and treated at the Pasteur Institute from the 4th of the same month, died from rabies at the Hôpital Broussais, in Paris, on August 4th.[5]

10. C. W. Dean described a fatal case in a boy, five years of age, bitten by a mad dog, who had been treated at the Pasteur Institute, and discharged as recovered.[6]

11. At a meeting of the Academy of Medicine in Paris, on January 4, 1888, Professor Peter communicated a case, observed by Dr. Miquel, concerning a certain Révaillac, twenty years of age, bitten by a dog considered mad by a veterinary surgeon; the dog was killed the next day. The place of the bite was cauterized, and forty-eight hours after the bite had taken place the patient came to the Pasteur Institute. During twelve days injections were made three times a day in the hypochondrium. On December 12, 1887, the patient commenced to feel a great pain in the place of the injections and not in the place of the bite. In a short time general debility followed. The next day he was apathetic and dejected, and four days afterward died with foam on his lips. The day before his death he had convulsions and difficulty in swallowing. Death followed six weeks from the day of the bite.

12. In the *Semaine Médicale*[7] Professor Peter, speaking about microbes and alkaloids, states that Berger died six months, and Sinardot died two years and three months, after injections at the Institute.

Here we have some of the successful results of the Pasteurian treatment, selected from the literature of last year.

Pasteur himself, knowing well the insufficiency of the inoculations, found it advisable to take a certain precaution, namely, that his method cures only such cases where the bite is not deep and not on the head. What is the good of such a precaution? Is it not evident that the inoculations help at that time when the virus has not entered into the blood, and are inefficacious if the virus has been introduced?

I cannot understand why Pasteur's method is unsuccessful in cases where bites by rabid animals are large and deep, especially in the face. If the virus acts through the nerves, the least scratch must allow the contact of the virus with the nerves, in which the skin abounds; at last the circulation permits the virus to come in contact with all tissues.

Every new method deserves our attention as long as it shows itself efficacious in serious cases which cannot be cured by other methods. Meanwhile, the Pasteurian method includes only slight and doubtful cases, and excludes the serious; in one word, it cures those cases which probably would recover without any inoculations.

Finally, Pasteur asserts that the inoculations weaken the virus introduced by the bite of a rabid animal, *i.e.*, accustom the organism to the virus, no matter whether the unfortunate persons treated by him have or not very violent symptoms of rabies. If the inoculations harden the organism against the virus, then the symptoms of rabies should be very mild, as it is evident in small-pox. In what way, I ask, does Pasteur see the preventive properties of the inoculations? His method neither prevents rabies nor does it weaken its symptoms.

If we consider the above, and add to it the cases given by Professor Peter, out of which the first died, probably from intensive inoculations, the second in six months, and the third died from rabies two years and three months after the Pasteurian treatment, we must acknowledge that this method can only be of value for veterinary surgeons, but being transferred to men, it is unscientific, and as such must be condemned in the interest of humanity and science.

I must still mention that the experiments made by Professor Roch, and M. Schutz, professor of the Veterinary School of Berlin, have shown that the mortality from charbon is sensibly the same in vaccinated and unvaccinated animals, and the practice has been nearly entirely abandoned; and, therefore, this Pasteurian method also, which made a great noise in the world and was accepted with enthusiasm, has been proved to be false.

87 Krakowskie Przedmiescie.

[1] Semaine Médicale, July 4, 1888. [2] Ibid., July 25, 1888.
[3] Ibid., August 22, 1888. [4] Ibid., August 29, 1888.
[5] Semaine Médicale, quoted by Lancet, September 15, 1888. p. 547.
[6] Lancet, June 16, 1888. [7] November 21, 1888.

A REPORT ON THE MINERAL WATERS OF THE UNITED STATES BY THE COMMITTEE APPOINTED BY THE AMERICAN CLIMATOLOGICAL ASSOCIATION.[1]

By CLARENCE C. RICE, M.D.,
NEW YORK.

At the Third Annual Meeting of the American Climatological Association, held in Philadelphia in May, 1886, it was recommended and approved that a committee be appointed to investigate the subject of the mineral waters of the United States. I was made chairman of this committee, and was given power to add two members of this Association to the committee.

I was fortunate in securing the services of Alfred L. Loomis, M.D., for your committee, as Dr. Loomis has always taken a deep interest in the study of the therapeutic value of our mineral springs.

In the President's address, delivered at the Second Annual Meeting, Dr. Loomis recommended that this Association should include the study of our mineral springs in its investigations, and prophesied a great future for the intelligent application of this department of therapeutics. Your committee was also much strengthened by the addition of J. L. Cabell, M.D., of the University of Virginia, who has a very thorough knowledge of the Mineral Springs of Virginia.

It was not the intention of this committee to compete in any way with the very valuable and painstaking work which has been accomplished by a member of this Asso-

[1] Read before the American Climatological Association at its Fifth Annual Meeting, September, 1888.

ciation, Dr. A. C. Peale, of the United States Geological Survey. Personally, I may say that I hope the Climatological Association will receive as much credit from his investigations as will the United States Geological Survey. The gentlemen are familiar with the paper read by Dr. Peale, "The Classification of American Mineral Waters." The present committee could not hope to add any further information as to the chemical analyses of the nearly eight hundred American springs which have been compiled and tabulated by Dr. Peale, and printed in Bulletin No. 32 of the United States Geological Survey. Nor has any attempt been made to increase the number of springs found in that list, which is the most complete one for reference. We find a number of springs in our report which we do not find in Dr. Peale's list, but it is probable that he has them under a slightly different name. And just here we would say that the work of studying our American mineral springs is considerably embarrassed by the constant repetition of names of springs even in the same State and county. In Virginia, Tennessee, Kentucky, and other Southern States, we have White Sulphur and Red Sulphur and Black Sulphur repeatedly used as names, and oftentimes with little else in the way of nomenclature to distinguish them. We hope eventually that springs which are found to be of therapeutic value will be named so that they will not be confounded with other springs. It is desirable that a nomenclature based upon the name of the owner of the spring, as Smith, Jones, West, etc., which is, of course, liable to frequent changes, or a nomenclature based upon a single chemical constituent, as alum, iron, or sulphur, be done away with. Perhaps there is no better method of nomenclature than to give the spring the name of the town in which it is situated, as is done with the Ems and Carlsbad, and distinguishing the various springs in the same town by a name indicating their principal chemical ingredient. It may come within the province of this Association to suggest appropriate names for springs which prove to be of value medicinally. It was thought that your committee could best serve this Association by endeavoring to make a therapeutic classification based upon the physiological action of the waters. Thus far all therapeutic deductions have been based upon the chemical composition of the spring. Such deductions must necessarily be liable to error, for several reasons. 1. The analyses are not trustworthy in many instances. 2. There are many so-called "indifferent" waters which contain no prominent mineral ingredient, so that it is not possible to even speculate as to their therapeutic effects. 3. While many analyses are accurate enough, our knowledge of the physiological effects of a combination of a dozen salts in varying proportions, viewed from a chemical stand-point, is, and probably always will be, very imperfect. At present therapeutic deductions are based on the assumption that the predominant mineral ingredient or quantity determines the physiological effect of the water, and we know that this does not always appear to be the case, for frequently the effects are totally different from what the ingredients alone would produce.

With the hope of obtaining some new data as to the physiological action of our mineral waters, we drafted the following letter of inquiry:

"*To the Proprietors and Resident Physicians of the Mineral Springs of the United States.*

"NEW YORK, May, 1887.

"The undersigned, having been appointed a committee by the American Climatological Association to investigate the subject of Mineral Springs with respect to their value as sanitary and therapeutical agents, respectfully solicit your co-operation and request you to answer as promptly as possible the following questions.

"1. The location and name of the mineral springs in which you are interested:

"2. The analysis of the waters, if any has been made by competent chemists. In furnishing a tabular statement of the quantitative analysis, please be careful to state the quantity of water represented, whether a pint, quart, or gallon. This is sometimes omitted and the table loses its value.

"3. What are the physiological effects of the water? That is to say, what effect has a definite quantity of the water on the natural functions of life, as indicated by the pulse, by any change in the quantity or quality of the secretions, by the appetite, by the general feelings, etc. Note any variations connected with differences in the amount of water taken.

"4. What are the diseases in the treatment of which the waters seem to exert a real therapeutical effect?

"5. What is your mode of using them in each of these classes of diseases, and with what results?

"6. At what season of the year are your observations made?

"7. What is the average number of people treated yearly?

"8. Is there a Signal Service station in your neighborhood? If so, can you furnish a copy of the reports for the last season of the springs? If not, has any record of temperature and relative humidity been kept by you or others? If so, please furnish a copy.

"GENERAL REMARKS.—Please add anything of interest relating to the subject of mineral-water therapeutics."

This was mailed to the address of every mineral spring in the United States given by Walton, and to each spring in Dr. Peale's classification which was mentioned as a resort, or where the waters are used commercially. Five hundred and eighty-three letters were sent out; answers were received from 308 mineral springs. The answers consisted not only of the committee's blanks, more or less filled, but every variety of hotel circulars and advertisements, printed descriptions of the town and springs, etc. Probably three-fourths of the answers were written by hotel proprietors. The names and locations were usually satisfactorily given. In regard to analysis, Question No. 2, I need say little, as that ground has been thoroughly covered by Dr. Peale, and we would refer anyone who desires to ascertain the chemical analysis of any spring to consult Bulletin No. 32 of the United States Geological Survey. Most of the analyses we have received were a number of years old. Many of them were given in a rough way and were qualitative, not quantitative.

We regret to say that our third question elicited little valuable or scientific information. The majority of the answers were written by the owners of the springs, probably because there was no physician who was especially identified with the use of the waters, and because the owner preferred to trust himself to give all the healing and curing properties of his water. Whenever the next investigation of our mineral springs is made, we would advise that the United States Medical Directory be consulted and the inquiries addressed to the reputable physician who resides at the springs. Our envelopes were addressed to the resident physician or hotel proprietor. We have received but few intelligent replies from physicians; most of the physicians, in their zeal to state the wonderful therapeutic powers of the waters they were interested in, have confounded physiological action with therapeutic effects. It is discouraging to endeavor to extract anything of value from a report of a mineral water in which all the functions of life are said to be affected, and that, too, in the most unphysiological manner.

Many of our answers would read as follows: "Our waters act on the skin, kidneys, and bowels, and are useful in liver, kidney, stomach, and bowel disorders, and in rheumatism." In arriving at therapeutic deductions, therefore, there is a strong temptation to consult the analysis table alone and base our opinion of the therapeutic value of the water on the known physiological action of the one or two main mineral ingredients, and this is proper up to a certain point, for we shall always be guided by the analysis in selecting the proper spring for our pa-

tients. Clinical investigation comes later, and must supplement our knowledge of the chemical composition of waters. It is encouraging, however, to note that much more attention is being paid to the investigation of mineral waters each year. The letters of inquiry which have been sent out will stimulate physicians, we believe, to treat their cases more satisfactorily, and will induce owners to furnish better accommodations for patients.

Dr. George B. Fowler, of New York, has also sent out a large number of letters of inquiry in regard to our mineral springs, the results of which have been published in Wood's "Reference Handbook of the Medical Sciences."

A committee of the American Medical Association, of which Dr. William Pepper [1] was chairman, made their report in June, 1880.

The report consists mainly of a classified list of all the reliable analyses. No attempt was made to tabulate the clinical effects of the waters.

Dr. J. R. Duggan, of Macon, Ga., in 1881 wrote a comprehensive account of the mineral springs of Georgia.

Our fifth question: "What is your mode of using the waters in each of the classes of diseases, and with what results?" was, with but a very few exceptions, ignored. The answers were seldom more explicit than "bathing and drinking." The answers did not explain the kind of bath or method of giving it, and no directions, except in a few instances, were given as to the quantity of water to be taken, or the proper time of using it.

Question 7, "What is the average number of people treated yearly?" was not answered fully enough to give us any adequate idea of the number of people in the United States who yearly drink the waters, or take the baths at our mineral springs. I have, however, placed the number received on my table.

In regard to Question 8—asking for a record of temperature, humidity, etc.—the few answers received make it evident that we cannot depend upon any private sources of information, but must consult Signal Service statistics.

I need not say to this Association that the matter of mean temperature at the location of a mineral spring, its relative humidity, the topography of the country, its general environment in the matter of scenery, hotel accommodation, society, etc., are all matters to be as carefully studied as the character of the waters, for it remains still to be proved that there are more cures recorded at those springs which contain an abundance of mineral matter than would be effected at a spring of remarkable purity containing a palatable quantity of carbonic-acid gas, as the Underwood Spring water, of Maine, and the Salutaris, of Michigan.

Many of the most striking therapeutic effects are seen at springs which contain but a few grains of mineral ingredients.

Macpherson [2] says: "The vast majority of sulphur or of chalybeate springs in England are so slightly impregnated with any mineral contents that the cures effected by them must be regarded simply as cold-water drinking cures."

And no one can deny that pure water can be prescribed in such a variety of ways as to produce many different physiological actions.

Table showing the Number of Inquiries sent out and the Answers received from the Various States, also the Number of Reliable and Unreliable Analyses.

States.	Number of inquiries sent.	Number of answers received.	Analyses made by chemists.	Rough analyses.	No Analyses.
Maine	11	5	5	..	..
New Hampshire	8	3	1	1	1
Vermont	13	10	5	2	3
Massachusetts	8	4	4	..	..
Connecticut	5	2	1	..	1
New York	46	33	21	..	5
New Jersey	1	1	1	..	..
Pennsylvania	16	11	9	..	2
Maryland	6	2	2	..	..
Virginia	59	38	26	1	11
West Virginia	13	8	8	..	..
North Carolina	25	12	7	4	1
South Carolina	5	5	1	4	..
Georgia	26	7	4	2	1
Florida	11	3	3	..	..
Alabama	23	8	5	1	2
Mississippi	13	5	3	..	2
Tennessee	52	15	8	2	5
Kentucky	22	19	7	2	10
Arkansas	19	2	1	1	..
Indian Territory	1	0	0	..	..
Louisiana	4	0	0	..	..
Texas	12	8	6	..	2
Ohio	8	7	5	..	2
Indiana	13	7	7	..	..
Illinois	7	4	3	1	..
Michigan	15	7	4	..	3
Wisconsin	11	14	11	..	4
Minnesota	4	2	2	..	..
Dakota	2	1	1	..	..
Iowa	8	2	0	1	1
Missouri	16	12	10	2	..
Kansas	5	2	2	..	..
Montana	5	1	0	..	1
Idaho Territory	1	1	1	..	..
Wyoming	1	0	0	..	..
Utah	3	0	0	..	..
Colorado	15	14	10	1	3
New Mexico	5	2	2	..	..
Nevada	9	3	0	3	..
California	39	26	14	2	10
Oregon	13	1	0	..	1
Washington Territory	2	1	1	..	.

The following classification has been prepared in order to show both the physiological and therapeutical action of the mineral springs. It is impossible at this date to give to the Association the reports which have been heard from through our letters of inquiry. It will require a longer time to obtain reliable information from many of our watering-places.

Name of spring.	Location.	Source of information.	Number of people treated yearly.	Method of using waters.	Situation near Signal Service Station.	Analysis, scientific or rough.	Chemical classification.	Physiological action.	Therapeutic effect in diseases of—						Therapeutics of external use of waters.
									Digestive system.	Respiratory system.	Genito-urinary system.	Nervous system.	The skin.	General diseases.	

How can the American Climatological Association encourage the physicians who practise at our mineral springs to make careful clinical observations in their work, and to keep honest records of their cases? If this Association desires to be responsible for this work, a systematic plan must be elaborated—a committee must be formed composed of one, perhaps two members from each State. The committee should print letters of inquiry and record blanks, covering not only physiological action and clinical observation, but they should also include the Signal Service reports as to temperature, humidity, rainfall, sunshine, etc.

These record blanks should be as simple as possible, so that they could be filled out with the least possible trouble. The resident physician of the largest experience should be addressed by the member of the committee from his State, and he should be requested to make monthly reports during the "season." I presume most resident physicians

[1] Pepper: Report of Committee on Sanitation and on Mineral Springs, Trans. American Medical Assoc., 1880, vol. xxxi., p. 537.

[2] Macpherson: Baths and Wells of Europe, p. 108.

would comply readily with such a request. The hope of the proper recognition of the therapeutic value of the mineral spring would be a sufficient reward to the resident physician, and such recognition would increase his reputation and income. The Association needs also to look after the matter of the chemical analysis of American mineral waters. About nine-tenths of the entire number remain unanalyzed, and the analyses of the remaining one-tenth are, many of them, old and worthless, as it is known that the chemical composition of many of the waters is constantly changing, new salts being formed by the interchange of acids and gases.

It would be well perhaps for this Association to adopt some one of the many schemes of chemical classification which are now in use.

The simplest one, which at the same time covers the ground in a comprehensive manner, is the most desirable. From a chemical stand-point Peale's classification seems to be the most correct, and preferable to Walton's, for the reasons stated in his paper of last year. His four main groups—1st, alkaline; 2d, alkaline-saline; 3d, saline; 4th, acid—will be sufficient for the ordinary practitioner of medicine, while the number of subdivisions may be utilized by the chemist or medical expert. A still simpler classification may be found in Wood's "Reference Handbook of the Medical Sciences," vol. iv., p. 690, in which there are also four groups: 1st, Neutral, containing the chlorides and sulphates, 2d, alkaline, the carbonates; 3d, acid; and in the fourth group are included waters which contain unusual ingredients. There is the same objection to this last group as could be urged against the older one which was headed "Indifferent Waters." No two persons are agreed either as to what is an indifferent water or one in which the ingredients are remarkable. In comparing American springs with those of Europe, our lack of thermal waters, north and east, is always noted to our disadvantage. It is for this Association to determine whether our waters, artificially heated, are not therapeutically just as efficient as natural thermal waters of the same chemical ingredients.

In many of the replies received, the owners of the springs indicated a wish to have the waters analyzed. They apparently do not know how to secure an analysis. The United States Government is, I understand, quite willing to analyze any waters. The government management of many of the European waters has largely developed their resources. It would be a step in the right direction if this Association could secure such legislation as would compel the analysis of all mineral waters which are used medicinally.

ALFRED L. LOOMIS, M.D.,
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Committee.

FLUTE-PLAYER'S CRAMP.—A case of professional cramp in a flute-player was well described by M. Féré at a recent meeting of the Société de Biologie. The patient was a habitual member of a theatrical company, to whom the flute was the only instrument allotted. He felt at first a paralysis in the extensors of the ring-finger and little finger of each hand, and then a cramp in the opposing muscles, which made him drop the instrument, sometimes with a cry of pain. Local massage and general tonic treatment brought him back again to a condition fit to resume his former work, though those of his audience with a finer ear than the rest could trace the effects of the cramp in the slightly slower time in which the notes played by the ring-finger and little finger were given. M. Brown-Séquard took the opportunity to press the remark that in such cases of professional cramp the fatigue of the whole body was at least an equally essentially component with the local strain. In a case of writer's cramp in a Cincinnati journalist he had seen both feet as much affected as both hands after an excess of writing.—*The Practitioner.*

RICKETS—ITS PREVALENCE IN BUFFALO, AND ITS PROBABLE INFLUENCE UPON THE DEATH-RATE AMONG YOUNG CHILDREN.[1]

BY IRVING M. SNOW, M.D.,
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DURING my stay in Europe I was struck with the frequency of rachitis in the large cities, and with the important rôle it seemed to play in most of the diseases of young children. In the clinics of Monti and Widerhofer in Vienna, as a case of bronchitis, pneumonia, or diarrhœa came up for examination, the professor would often lay great stress upon the fact that the pulmonary or intestinal disorder was complicated with rickets, and that all correct therapeutical measures must be addressed to the underlying cause as well as to the more prominent symptoms. That rickets is exceedingly common throughout all Europe is shown by the statistics of various authorities. Gee found that thirty per cent. of all children under two years of age admitted into the Great Ormond Street Hospital, London, were rachitic; Ritterhain, in Prague, estimated the percentage of rickety children in the hospital at thirty-one; in Manchester the proportion of rickety children applying for treatment at dispensaries and hospital was thirty per cent. of the whole number. In Vienna and Berlin the percentage is certainly no less. Sir William Jenner, in his classical lectures upon rachitis, says: "Of the tubercular, the rachitic, and the syphilic diatheses, the rachitic is the most frequent, most fatal, and the most important." Of American authors Jacobi and Parry alone assert that rachitis is common in the United States, and most American physicians believe it to be a disorder of the Old World, not often present in American children. Most of the younger members of the profession have, I think, shared in this opinion, influenced by the stand-point of prominent authors and by the slight emphasis laid upon the disease by their clinical teachers. It is quite possible that in former years rickets was rare in this country, but times have changed, and the conditions of life are no longer the same as thirty or forty years ago. The population of the large cities has enormously increased, and is different in character. The number of families in easy circumstances has greatly multiplied, and wealth, bringing with it many advantages, also carries with it the disadvantage that many mothers are now unable to nurse their offspring. Again, the proportion of families either in indigent circumstances or who at least are obliged to exercise severe economy is very large. Many of our citizens are of foreign birth or parentage, of peasant stock, who have settled in large towns. Thus their children no longer have the advantages of air and exercise which the parents enjoyed; thus finding virtually the same conditions of life for children prevailing in American and in European communities, viz., city environments and artificial diet. I have made some slight investigations as to the prevalence of rachitis in Buffalo.

Etiology.—Rickets is largely confined to children reared upon artificial food; its heredity is questionable. Thus Trousseau found that among one hundred rachitic children ninety-eight had either not been suckled at all or had been weaned very young. Uncleanliness, want of sunlight, bad air, and insufficient clothing are also important factors in its causation. Nevertheless, children reared under the most favorable hygienic surroundings will become rachitic if improperly nourished. I will quote the remarks of Dr. Cheadle upon this subject. He says: "In the development of rickets it is the quality and not the quantity of food involved. The defect in most artificial foods is in the excess of their starchy elements. Not that starch is itself injurious, although difficult to digest and prone to fermentative changes, but to the absence of other ingredients, deficiency in fat and animal proteids.

[1] Read before the Alumni Association of the University of Buffalo, Medical Department, March 26, 1889.

The correct proportion of fat to the solids in human milk is 1 to 4; but many artificial farinaceous foods contain a mere trace of fat—from $\frac{1}{20}$ to $\frac{1}{100}$ of the total solids. Rickets is, according to Cheadle, a diet-disease, which may be caused at will by rachitic diet and cured by anti-rachitic diet.

A child will inevitably become rachitic if its food is lacking in animal fat, in earthy salts, or in animal proteids. Further, in rickety children the disease is intensified by foul air and want of sunlight, and is also modified by syphilis and scurvy. Dr. Cheadle relates an interesting chapter in comparative pathology. In London it has hitherto been impossible to rear the numerous litters of young lions born in the Zoological Garden. Some twenty litters perished in succession last year. An examination showed that all of the cubs died of acute rachitis, as shown by the condition of the bones. It appears that lionesses in captivity do not suckle their young, as they are apt to injure or neglect them. The young cubs are therefore fed upon the flesh of old horses. This meat, as will be readily imagined, is very tough and very lean, and the bones are so hard that the powerful jaws of an adult lion are unable to crack them. Thus the young lions are unable to get the earthy salts and nutritious fats contained in the medullary cavities. Mr. Sutton put the young lions upon chopped meat, pounded bones, and cod-liver oil, and, greatly to the surprise and joy of his colleague, succeeded in raising a litter, an event almost unprecedented in the traditions of the Zoological Garden. Rachitis is now regarded as a general disease, involving all important tissues of the body.

This is demonstrated in the blood by the pallor of rachitic children; in the skin by excessive sweating; in the nervous system by various phenomena, as convulsions and tetany; in the muscles by the languor and weakness of rickety children; in the mucous membranes by the tendency to croup, bronchitis, and diarrhœa; in the ligaments by the yielding of the spine and by relaxed knee and ankle joints; in the osseous system by the bending and deformity of various long bones, by enlarged epiphyses. I am unable, for lack of time, to go deeply into the pathology and morbid anatomy of rachitis. The changes in the bones are most striking and have been very completely studied. There is increased absorption of osseous tissue, accompanied by the formation of an osteoid tissue incompletely calcified. The proliferation of cartilage-cells is increased, and the continuous absorption of bony tissue has the effect of enlarging and multiplying the medullary cavities. Rachitic bones are soft, easily bent, may be cut by a knife, and are hyperæmic. The process heals by osteo-sclerosis, the bones becoming very hard and dense. I will say, in passing, that it is remarkable to see what extreme degrees of deformity of the thorax and extremities will disappear under proper treatment.

Symptoms.—All physicians are familiar with the extreme types of deformity found in rachitic children. It is undoubtedly true that pigeon-breasted children and children with crooked legs are somewhat rare in America, and, since the idea is common that rickets is a disease necessarily accompanied by extreme deformity, the conclusion is reached that rickets is one of the rarer diseases of children. On the contrary, rachitis is often most insidious in its appearance, and in the early stages can be detected only by a careful physical examination. Well-authenticated cases of fœtal rickets have been reported, also cases beginning after the third year; but it is my purpose in this paper to dwell only on common types, to discuss its prevalence in Buffalo, to consider its probable influence upon the mortality among children, using the vital statistics of Buffalo as my text.

I will briefly rehearse the most prominent symptoms of rickets, omitting contested points: (1) Rickets may show itself in young children, from two to four months of age, by obstinate constipation, requiring laxatives and injections to overcome. At this stage the child may be fat and apparently quite well, except that it is pale and languid. The mother may also say that the child is very restless, kicking off the bed-clothes at night, so that even in a cold night she will find it uncovered. Occasionally these children are very tender to handle, crying as if in pain when they are carried or caressed. As the disease progresses, changes are apparent in the skeleton. You will often see a child whose mother considers it a marvel of beauty and plumpness. She will point to the wrist and ankles, where the child appears to be so fat that the joint looks as though it were tightly constricted. It will commonly be found that this bulging at the wrist is due to swelling of the epiphyses, and that the bony structures at the wrist and ankle are largely increased in size. The same enlargement may take place at the knee and elbow. Changes also occur in the skull; absorption of osseous tissue, which is an essential feature of rachitis, takes place in the occipital and parietal bones. This softening, called cranio-tabes, is principally found in the occipital bone, about the lambdoidal suture; it may be discovered by carefully palpating the back of the head. Cranio-tabes may be so far advanced that only a membranous covering protects the brain from external pressure. The head is usually square in contour, and the anterior fontanelle, which should be completely closed at the fifteenth to the eighteenth month, may remain open as late as the third year. The jaw, instead of having an oval contour, is somewhat squarely shaped in rickets. In fact, the irregular shape of the inferior maxilla may greatly embarrass dentition. Dentition is late and irregular, and will be more fully discussed in another portion of the paper. Most conspicuous are the changes in the thorax. These are very frequent, and have a most important effect upon the health of the child. First, there may be a beading of the ribs, the so-called rachitic rosary. This condition may vary from a slight elevation at the junction of the rib and cartilage to a well-defined series of nodes on either side of the sternum; generally, the rib is depressed, and the rachitic swelling is larger in the chest than it seems outside. If the disease progress, the sternum is pushed outward, with a distinct groove on either side. The chest is narrowed laterally, and we have the classical pigeon breast. A lateral spreading of the thorax in the region of the floating ribs may take place. Here the softened ribs are pressed outward by the liver, spleen, and flatulent stomach and intestines. The chest appears to be transversely constricted. The lungs of rachitic children are small and often emphysematous, there being an absolute diminution in the capacity of the thorax. There may also exist a posterior curvature of the spine. This deformity is, however, merely an exaggeration of what may be seen in every infant when placed unsupported in a sitting position, and be due to softening of the bodies of the vertebræ, to stretching of the ligaments, and to muscular weakness. By holding the child up, with the hands in the child's axillæ, this curvature will always disappear. I will leave to obstetricians the description of the malformations of the pelvis. They are caused by softening of bone and pressure, and are fraught with misery to the parturient woman and woe to her offspring. Various twists and deformities occur in the extremities—bow-legs, genu valgum, and curves in the femur and humerus. Associated with the symptoms I have just enumerated is often an enlarged spleen or liver. It is, however, doubtful whether enlargement of these organs is anything more than a complication. The amount of muscular debility is far in excess of any wasting which may occur; in fact, a tubercular child, considerably emaciated, will display far more strength than a rachitic child apparently fairly nourished. There is evidently a profound disturbance of innervation in rachitis. Most authors speak of an increase in the salts of lime in the urine, while Jacobi asserts that they are diminished.

I wish here to emphasize the fact that all of these symptoms are not present in every case of rickets; an association of two or three is sufficient to establish a diagnosis. Although rickets is essentially a chronic disease, lasting

months or years, it may at any time be favorably influenced by diet. Even under a proper regimen, from six to twelve months are required for a cure. Rachitic children are late in walking; are mentally backward; are liable to attacks of dyspepsia, diarrhœa, spasm of the glottis, convulsions, and bronchitis. They succumb easily to any acute disease, or to any intestinal or pulmonary trouble. The feeble vitality of a rachitic child should be always a weighty factor in prognosis and treatment. I have postponed any enumeration of my cases of rachitis until now, wishing first to review the symptoms and etiology of the disease. During the last three months I have personally seen and examined 25 children with rachitis. Of these, 2 were seen in private practice. Of 25 children under three years of age seen at the Fitch Dispensary, 10 presented well-marked symptoms of rickets. I also examined 33 children under three years, in two orphan asylums, of whom 13 were rachitic. Therefore, of 58 children seen in various ways 23, or about forty per cent., showed well-defined symptoms of rickets. These children were either bottle-fed, or, if suckled by the mother, were given in addition various starchy foods. The diagnosis was always based upon an association of the following symptoms: Delayed dentition, open fontanelle after the age of eighteen months, beading of ribs and thoracic deformity, swelling of the epiphyses, and bending or deformity of the long bones. Delayed dentition and beading of the ribs were almost always present. It is noteworthy that, with three exceptions, all of the children were of foreign parentage—usually Irish, German, and Polish, 3 being of Italian and 1 of African descent. Most of them had suffered from repeated attacks of bronchitis and diarrhœa. All of them were backward in walking, of capricious appetite, and poor digestion. One rachitic child suffered from a large intramuscular abscess; another had a remarkable enlargement of the spleen, with œdema of the extremities, fever, and intense anæmia. Some had had slight convulsive seizures. Two cases were in one family, being the youngest of a family of five, illustrating the observation of Jenner, who says that rickets, in contrast to syphilis, shows itself in the youngest children, each successive child being more subject to rachitis than its predecessor. An explanation of this is that in poor families the mother is exhausted with child-bearing and household cares, and each additional child diminishes the resources of the family. Thus the child comes from enfeebled stock, is neglected, and often poorly nourished. Another child was in apparently blooming health. It was suckled by the mother. Nevertheless this baby, eight months old, presented well-marked beading of the ribs, and the wrist- and ankle-joints were considerably enlarged. By close questioning I elicited the fact that it suffered from frequent attacks of colic, and that its stools were masses of undigested milk. I very much regret that I am unable to present a larger number of cases than 25. But it seems to me apparent that these 25 cases, gathered from several different sources, must represent in some degree the prevalence of the disease in this city, for forty per cent. of the cases seen in the dispensary, and forty per cent. in the asylums, is too large a proportion to be the result of accident. I therefore believe the disease is very common in this city. If rickets prevail to any extent in American communities, it must exercise a very important influence in all diseases of childhood, and must play an exceedingly important rôle in infant-mortality. As dentition is almost always retarded and irregular in rickets, I may be permitted to dwell at some length upon its pathology. It is a stormy epoch with children. Although a physiological process, which should be regular in its course and without danger to life, nevertheless all authors agree that any illness occurring during teething is aggravated in type and dangerous and protracted in course. Convulsions, diarrhœa, bronchitis, are common in these critical months, and the mortality among children from six to twenty-four months of age, in Buffalo, is 1,500 yearly. I even find dentition ranked as a cause of death, 16 deaths from dentition being returned. Yet teething goes smoothly on in healthy children, the central incisors appearing at the seventh month, the lateral at the ninth, the first molars at the twelfth, the canine at the eighteenth, and the second molars at the twenty-fourth month. Any essential deviation from this order is a variation from the standard of health, and its cause should be sought for and explained. Delayed dentition is not due to all causes which enfeeble a child, for in infants suffering from diarrhœa or tuberculosis the eruption of the teeth is regular, and the teeth are often well formed and strong. Among the laity, many maladies of childhood are referred to the malignant influence of teething, and mothers ask their physicians why their children are so fretful and sickly, and why the teeth do not appear at the appointed time. The maternal anxieties are usually quieted with soothing assurances that all will be well in time, but the most common cause of irregular or delayed dentition is rickets. A rickety child may have no teeth even as late as the second year, or the eruption of teeth may progress regularly until the incisor teeth are through, and the child becoming rickety, dentition may be arrested for months. These rachitic teeth are very prone to decay, and most physicians have observed how very bad the teeth are among the children of the city poor. No physical examination of a sick child is complete without a careful inquiry into the condition of the teeth. If dentition be late or irregular, and if the child be harassed by digestive troubles, or obstinate pulmonary catarrh, the underlying cause will almost invariably be found to be rickets. I will quote again from Sir William Jenner upon this subject:

"If a child pass over the ninth month without teeth, you should carefully inquire for the cause. It may be that an acute illness has retarded dentition. It may be, but this is very rare, that there is some condition of the jaw which interferes with the advance of the teeth; it may be, and this is infinitely the more common cause of late dentition, that the child is rickety. Fail not, then, when called to a child in whom the teeth are late in appearing, to look if it be rickety, for if you fail to look for rickets you will most likely attribute to the irritation of teething symptoms which are the consequence of the rickety diathesis, the late dentition of rickets being in itself a symptom of the general disorder. The rickety deformities may be very trifling, and yet the teeth be considerably retarded in their development."

Digestive troubles in rickets.—One of the most prominent of the early symptoms of rickets is constipation. In a fat and well-nourished child two and three days may pass without an evacuation from the bowels. This constipation may precede the enlargement of the epiphyses and is present between the second and fourth month. Rachitic children are, in fact, constant sufferers from indigestion. They alternate between constipation and diarrhœa, and their stools present a great variety of color and consistency. Almost constant flatulence and colic are present. Rickets may also appear after a severe attack of cholera infantum or entero-colitis; the child ceases to walk; dentition, heretofore normal, becomes arrested, and the characteristic beading of the ribs is seen. Last year there died in this city, of digestive troubles, 567 children under the age of three. Of these, 403 died of cholera infantum, 132 of diarrhœa, and 32 of dysentery. It is well known that children suckled at the breast usually escape these serious illnesses, and if attacked are not apt to die; and also that children affected with cholera infantum are usually hand-fed and badly nourished upon cows' milk diluted with water, or upon artificial foods. These diseases prevail among children who have suffered from digestive troubles, amid a high temperature and vitiated air. I have examined many children with dyspepsia and diarrhœa in Vienna and London, and have found them rachitic in a very large portion. It is my firm conviction that if children who die of diarrhœal troubles were carefully examined the underlying cause of the enfeebled vitality and tendency to alimentary troubles would be found to be rickets. Surely the subject is worthy of investigation,

offering, perhaps, an explanation of the prevalence of those diseases which yearly decimate the infant population.

Bronchitis and pneumonia.—I will next consider the respiratory disorders of young children, seeking some explanation of the excessive death-rate, among patients under three years of age, from bronchitis and pneumonia. In 1888, among children under three years of age, there died 94 from bronchitis and 187 from pneumonia, a total of 281. It is probable that most of the cases returned as pneumonia were catarrhal or broncho-pneumonia, pure lobar pneumonia being rare among young children. Many of these fatal cases were undoubtedly secondary to measles, whooping-cough, or diarrhœa. Inflammations of the respiratory tract are exceedingly dangerous to infants in this climate, and it is instructive to study the various predisposing causes, the type of the disease, and the age and evironments of the little ones who succumb to bronchitis or pneumonia. Very hopeful is the prognosis in a healthy child who has been suckled by a strong and sensible mother, who has had the advantages of good air, sunlight, and proper diet. A physician attending two cases of lobular pneumonia will see one die and the other recover under the same treatment and the same conditions. He will account for this by considering that the dead child was a "bottle baby," that its vital forces were not equal to its more fortunate companion; in short, that it had a feeble constitution. Yet the feeble constitution may not be traceable to the mother, who is often strong and robust. Nevertheless the child was harassed by dyspepsia, was backward in teething, and fretful and feeble. Young children do not expectorate; the inflammatory products are coughed up and swallowed. Any condition which en feebles the muscular tissue of the lungs or the accessary muscles of respiration materially increases the danger in catarrhal pneumonia. This is also true of any malformation of the thorax which may diminish the number of air-cells available for respiration. Children do not die from high temperature in bronchitis, but from asphyxia, and two clinical features present themselves in dangerous cases: 1. A child with very rapid respiration (100 to 120), a feeble and quick pulse, a fairly high temperature (102° to 103° F.), râles throughout the lungs, sometimes with scattered areas of dulness, and often no perceptible alteration of percussion. The face is livid or gray, there is recession at the sternum during inspiration, and a perceptible impulse at the epigastrium.

2. In a child suffering from bronchitis or broncho-pneumonia the disease may present a peculiar and a typical course, the râles and dulness shift their location from day to day, and there may be only slight dulness with distant respiratory sounds. Occasionally bronchial or roughened breathing may be heard, and no râles at all. Vocal fremitus may be slightly increased. There is evidently no increase in the pulmonary inflammation, for there is no fever, the temperature being even subnormal. Nevertheless the child seems in imminent danger, there is great dyspnœa, rapid respiration, and a gray complexion. The patient may be half-comatose, gasping for air. This condition is caused by collapse of the lung, a frequent cause of death in infantile pneumonia. Pathologically, it may be distinguished from pneumonia by the fact that there is no accompanying pleuritis, that although foci of induration are scattered through the lungs they disappear upon inflation, and that these indurations, when incised, present a smooth surface like muscle, unlike the rough and granular tissue of pneumonia. Collapse of the lung will be found to be present in almost every fatal case of bronchitis or catarrhal pneumonia under twelve to eighteen months. The cause is often mechanical, the bronchioles being plugged by mucus which the child cannot cough up. The residual air in the alveolus is quickly absorbed into the blood, and the tract of lung is rendered completely airless.

Thus the plugging of the smaller tube is caused by muscular debility, greatly favored by a softened and flexible condition of the ribs and by thoracic deformity. But what causes this lessened vitality, this feeble constitution, from which a child dies suffocated by its own secretions? It is without doubt due to rickets more or less advanced, often unrecognized. If these children be carefully examined there will be found beading of the ribs, slight deformity of the thorax, large wrist-joints, delayed dentition, and great muscular debility. No more unfavorable condition to resist a pulmonary inflammation, either primary or secondary, exists than that presented by a rachitic child. The ribs are soft, the thorax deformed, the actual capacity of the chest is diminished, the spleen and liver are thrust downward in the abdominal cavity, the intestines are distended with gas, hindering the diaphragm in its descent; add to this disordered digestion and great muscular weakness, and it is no wonder that rachitic children die from pulmonary disorders. Fagge says: "It is a point of great practical importance to remember, that when one is called to a case of croup or broncho-pneumonia, one often has to do with an advanced case of rickets, although the mother may have thought the child in fairly good health at the beginning of its acute illness." Gerhardt ranks rickets as one of the most frequent predisposing causes of catarrhal pneumonia and alludes to the gravity of the prognosis in rickety children, from the deformed thorax and tendency to pulmonary collapse. Rilliet and Barthez allude to the sinister influence of rickets upon catarrhal pneumonia, accompanied as it is by grave disturbances of nutrition and by chronic diarrhœa. Angel Money says "rickety children are especially liable to bronchitis or broncho-pneumonia, speaks of the danger of pulmonary collapse, and says collapse of the lung is the result of bronchial catarrh, and that any catarrh, whether simple or from measles or whooping-cough, may be its cause, but the actual factor in its causation is deficient innervation, viz., rickets.

Sir William Jenner speaks of the great liability of rickety children to bronchitis and pneumonia, with attendant collapse of the lung. He mentions the enormous mortality among them from whooping-cough and measles, and asserts that rachitis causes, primarily and secondarily, more deaths than any other disease of childhood. It must also be remembered that a previously healthy child which has rallied from an acute illness may, in consequence of the profound disturbance in its nutrition, become rachitic, as shown by its inability to walk, arrested dentition, etc. I therefore believe that as rickets is common in this city, a large proportion of the deaths from pulmonary disorders are directly or indirectly due to its presence. I will lastly consider the influence of rickets upon the nervous disorders of childhood, first discussing a neurosis called tetany. This is a functional nervous disorder of rachitic children, and is called idiopathic contracture, carpo-pedal spasms, or, in modern nomenclature, tetany. A child suffering from dyspepsia, diarrhœa, or difficult dentition will often exhibit curious motor disturbances. The hands will be tightly clinched, and the toes are firmly flexed against the soles. This contracture is extremely painful, and is often overcome only by force. It may be produced or intensified by pressure over the large nerves or blood-vessels. The contracture of the extremities is usually bilateral, and may be paroxysmal, relaxing, or persisting for hours. Other regions may be attacked; the rigidity and contraction may affect the knee, elbow, and even the neck. In tetany the muscles are tightly contracted, and there may be œdema about the joints. Tetany is occasionally associated with spasm of the glottis and even eclampsia, both frequent symptoms of the rickety diathesis. The disease, in itself, is not dangerous to life, but, owing to its convulsive character, may be confused with cerebro-spinal meningitis.

I find that in this city there died last year, of convulsions, 241 children under three years of age. Exactly of what malady these children die is difficult to say, as a convulsion is merely a symptom of many diseases. The tendency to convulsions in children under one year of

age is very great, 212 of the deaths being in this period of life. The liability of infants to eclampsia is due to structural incompleteness of the cerebro-spinal system, the inhibitory centres being undeveloped, while the lower centres are structurally complete. Hence eclampsia in infants may be excited by a variety of trivial causes—indigestion, fright, febrile attacks, and a host of acute infections or inflammatory disorders. A convulsion may be defined as a tonic followed by a clonic spasm, and is the result of a discharge of the cerebral cortex. Victor Horsley has shown that there is no essential difference between infantile eclampsia, epilepsy, and epileptiform convulsions, etc. I will now briefly take up the various morbid processes accompanied by eclampsia, to see if the many deaths reported from convulsions may be traceable to well-defined disorders. Convulsions in the newly born are quite rare and are due to meningeal hemorrhage or asphyxia. They occur usually between the ages of four and eighteen months, the tendency to convulsions or convulsive symptoms diminishing with great rapidity after that time. Tubercular meningitis is very rare in the first year of life. Cerebro-spinal meningitis is an infrequent disease, and its symptoms are well known and evidently returned under a proper title. Neoplasms, apoplexy, and hydrocephalus are rareties in the first year of life, and hydrocephalus is certainly easily recognized. Meigs and Pepper, in reviewing the causes of convulsions, state that of 70 cases of sympathetic convulsions the disease present in 12 was scarlatina, in 9 whooping-cough, in 13 indigestion. Pneumonia, bronchitis, and cholera infantum each caused 3, fever of simple angina 6, dysentery 4, measles and dentition each 6, etc. With the exception of indigestion and dentition, which are vague terms, all of these diseases are easily diagnosed; their cause is evident by well-marked symptoms, and patients dying from these diseases are probably returned under their proper title. Yet Meigs and Pepper state that of the 1,316 children who died in Philadelphia of convulsions a large number should have been returned under other titles, as many of them must have been a mere result of organic disease of the cerebro-spinal axis or of other local or general diseases. Yet the same confusion or ignorance which prevails in Buffalo and in Philadelphia exists also in Breslau and in London, in the midst of famous seats of medical learning. In Breslau, of 8,884 deaths under one year, 2,466, or thirty per cent., were returned as being the result of convulsions. The same proportion, thirty per cent., is found in the London statistics. I am therefore forced to the conviction that most of the physicians returning deaths under the title of convulsions had sufficient knowledge to diagnose and to exclude meningitis and diseases with convulsive symptoms, and that we must search for some other cause for the large mortality from convulsions. I have shown that rachitis is common in this city, and is, I believe, usually undiscovered; and holding, as I do, to its frequency, I assert that many of the deaths ascribed to eclampsia were due to rachitis. As this theory may seem somewhat startling, I will cite evidence in support of my statement.

Gee, a distinguished physician of St. Bartholomew's Hospital, London, cites 73 cases of convulsions. Of these 56 were dependent upon the general condition of the child, no acute inflammatory or infectious disease being present. These 56 cases were therefore essential convulsions, and in each child he found evidence of rickets. He says: "A child may be attacked by convulsions while in apparently good health; but we must bear in mind that active rickets and the presence of a large amount of fat are by no means incompatible." It must be remembered that convulsions come on in weakly children from causes inadequate to produce eclampsia in healthy infants, viz., indigestion, the eruption of teeth, heat, cold, fright. Angel Money, in his new book, says: "By far the most potent cause of convulsions in children is rickets. There is an excessive activity of the centres of the brain and cord, upon which reflex spasm and convulsions depend. Convulsions may occur without assignable cause in rickety children, and it is of great utility in the treatment of convulsions in rickety children to know the cause." Henoch, of Berlin, says: "In all cases of convulsions I recommend the examination of the bones of the child. My experience is that infinitely the most frequent cause of eclampsia is rickets, and, taught by numerous cases, I examine in every eclamptic child the epiphyses, the thorax, and the head. In eclampsia, rachitis plays a more important rôle than dentition. We seldom see convulsions in teething children who are not rachitic." He is of the same opinion as to the etiology of laryngismus stridulus, or spasm of the glottis, which is a pure neurosis unaccompanied by structural tissue-changes in the larynx. Jenner had never seen but one case of laryngismus stridulus which was not dependent upon rachitis. Gee, Gowers, and Money all corroborate the idea that rachitic children are the ones who suffer from spasm of the glottis. This is additional testimony to the abnormal excitability of the nervous system in rickets. We must also remember that spasm of the glottis is an occasional cause of death. Parry, an American author, believes that both in private and hospital practice rickets and eclampsia are associated, but does not lay the stress upon the association that Gee does, finding a connection in only twenty-five per cent.

Elsässer attributes eclampsia in rickets to cranio-tabes. The convulsions usually come on when the child is in bed; the pressure of the pillow irritates the cortex, which is unprotected by its unyielding bone covering. Of 29 cases of soft occiput 14 had convulsions, 10 ending fatally. Vogel and Wellshire also speak of the gravity of convulsions in rachitic children, and believe that many children die, no changes being found in the brain or meninges. Yet Meigs and Pepper hold that rachitis is rare in America, and further say that the eclampsia in teething children is rarely serious; the 1,316 unexplained deaths in Philadelphia to the contrary notwithstanding. There is, happily, little difference of opinion in the treatment of rickets. Being essentially a disease caused by improper feeding and malnutrition, it is cured rather by dietetics than by drugs. It goes without saying that children are immensely benefited by fresh, pure air and sunlight, and that a removal to the country or seaside has a distinctly curative effect. This is also true of hydrotherapeutics, bathing the child with lukewarm or cold water, to which may be added a little sea-salt. Feeble children should be bathed before an open fire, and well rubbed afterward. Suitable clothing should be insisted upon, for it is astonishing how many layers of garments an unfortunate child with bronchitis will wear. Children should be regularly fed or suckled. A great evil is giving a child the breast whenever it cries, practically amounting to nursing it all the time. It is exceedingly common for children of a year to be brought to the table and share with the rest. The child is thus regaled with tea, coffee, vegetables, fruits, and pastry, and becomes so sickly and fretful that the house is filled with its lamentations from morning until night. Although starchy foods can be assimilated to some degree by a child of a year, yet farinaceous foods are prone to ferment, and are often given in such quantities as to replace the nitrogeneous and fatty elements so necessary to nutrition.

The same might be said of artificial foods which contain a lage amount of dextrine, a fair quantity of albuminoids, and relatively little fat. The proportion of fat to the solid constituents of milk should be as one to four.

Dr. Cheadle believes that the administration of peptonized food is injurious, weakening the functions of the stomach. Theoretically it might seem as if the salts of lime might be curative, as the bones in rickets are deficient in lime salts. However, bone already calcified is decalcified, as shown in cranio-tabes. There is often no lack of lime in the blood, as the urine—a secretion of the blood—often contains six times its usual per cent. of lime salts. Lastly, if lime salts be given, they only serve as a

clog to digestion, and can mostly be recovered from the stools. Kassowitz, of Vienna, has asserted that phosphorus is beneficial, reasoning from the rapid and dense ossification which takes place in animals after the administration of phosphorus. I have frequented his clinic in Vienna and failed to observe that his patients did better than under other methods of treatment. Iron is often directly beneficial in the anæmia of rickets, but the most rapid improvement follows the use of fats, cream, and cod-liver oil. Cream is often better borne than cod-liver oil, and may be advantageously mixed with the prepared foods of hand-fed children. In most of the European hospitals cod-liver oil is given to rachitic children. It is remarkable to see how quickly a bronchitis or diarrhœa of weeks' duration will improve under the use of cod-liver oil. If the oil be vomited or cause diarrhœa, it may be given by inunction. Cheadle and most English authorities recommend raw meat, either scraped or chopped. This is very well taken by children. It is well in older children to cut off all starchy foods, giving chiefly meat, eggs, milk, and cod-liver oil. To effect a cure this regimen must be adhered to for months, although a substantial improvement will usually be seen in a few weeks. I have detailed at great length the etiology, the symptoms of rickets, and have described the manner in which rickets complicates various diseases of childhood. Although I am able to report only twenty-five cases, nevertheless the proportion of children affected, forty per cent., is large enough to demonstrate that rickets is a very common disease in this city, and I am persuaded that with wider observation and a keener insight into infantile disorders much that I have asserted as to its dangerous and often fatal influence will be conceded by American physicians.

WHY IS FREE HYDROCHLORIC ACID DIMINISHED IN GASTRIC CARCINOMA?

By A. V. PHELPS, M.D.,

CINCINNATI, O.

In 1879 Von der Velden, while examining about a score of cases of dilatation of the stomach, found that in those cases due to carcinoma of the pylorus the fluids removed by the stomach-pump were free from hydrochloric acid, while in those due to simple ulcer, and causes other than carcinoma, that if the acid was absent or diminished it was only temporarily.

These observations have since been confirmed, but as yet the absence of hydrochloric acid from the fluids obtained from a suspected stomach (unless the condition continued for some time) would not justify one in making a diagnosis of carcinoma, although its continued presence would be an excellent negative sign.

So generally has this been accepted that several delicate tests for free hydrochloric acid have been perfected, and limitations of the value of each drawn. In this day of medicine, however, we have ceased receiving such things and applying them in the empirical manner of our medical forefathers. We are very much in the state that young Barnacle of the Circumlocution Office reported Arthur Clennam to be in, that is, of "wanting to know, you know." The thing we want to know is, why is free hydrochloric acid diminished or absent in gastric carcinoma? It may be said that the free acid is diminished because of the lowered vitality of the body as a whole, the glands of the stomach imperfectly functionating because of the poor quality of the blood they receive, for Beaumont found in the gastric juice of that ever-reliable Alexis St. Martin a diminution of free acid during attacks of fever, or when the patient was anæmic. Hoppe-Seyler found no free acid in a number of cases of typhus he examined.

Is carcinoma due to a specific organism? By comparing its manner of growth and its clinical history with tuberculosis, a disease known to be of such nature, it seems most probable. We may have a local tuberculosis spreading by continuity and contiguity, as carcinoma usually does, or we may suddenly have a general carcinosis from ulceration of a local growth into a blood-vessel just as we have a general tuberculosis when the same occurs. That it is a specific disease best explains recurrence after imperfect removal, also the infection of the nearest lymphatic glands, which heretofore has been explained by the multiplication of arrested cells, and also by their so-called "spermatic action" on the cells of the gland in which they are stopped.

Many experts are hunting for this specific organism, and no doubt one will soon be found which can fill the position undisputed.

But what has all this to do with the absence of hydrochloric acid?

Riegel found that even normal gastric juice (taken from a perfectly healthy subject), when mixed with juice from carcinoma, has its digestive powers weakened, not converting albumin, as did other portions not so mixed.

Strümpell in speaking of this says: "This makes it seem probable that the normally constituted hydrochloric acid is in some way altered by the carcinoma."

Assuming carcinoma to be a specific disease, we think that the free hydrochloric acid is diminished or absent because it combines with ptomaïnes produced by activity of the organisms.

Analogy is often good argument for the thing unproven.

In the last few years quite a controversy has been going on between the laboratory-workers and the clinicians as to the way in which iodoform acts to be so useful in suppurating wounds.

It has now been proven that iodoform does not destroy the pyogenic germs, but combines with and renders inert their ptomaïnes, and thus the tissues being, relieved from the deleterious effects of the ptomaïnes, combat successfully the germs.

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UNUSUAL CASES IN OBSTETRIC PRACTICE.

By JOHN TRUMBULL, M.D.,

VALPARAISO, CHILI.

I. *Painless labor.*—On October 6, 1887, I was called at 4 A.M. to see Mrs. W—— in confinement with her fifth child. The membranes were intact and cervix dilated to the size of a quarter, head presenting. Every five or six minutes uterine contractions came on. To call them "pains" would be incorrect, for the patient declared she felt nothing whatever, and there was not the slightest change of expression to indicate pain. A little moisture with staining was all that had warned her of approaching delivery.

In consequence of the absence of suffering, the quietness of the patient enabled me to carefully observe the uterine contractions with the finger against the bulging membranes, and it was interesting to note the remittent character manifest in each uterine contraction. There were always three or four distinct waves of contraction, each slackening a little before a stronger spasm followed, thus giving one the impression of what one might graphically describe by the curve of a muscle thrown into contraction by several succeeding induction-shocks. It is probable that, as the pains are intermittent as regards one another, they manifest a remittent type in the several contractions which go to form one "pain." Repeatedly since, I have sought to observe this in other cases, but the restlessness has made it impossible to confirm with the intact membranes what, however, is the impression given by the advancing head later on, of recession and advance alternating in one pain. The normal method of uterine

action is manifestly by successive spasms or contractions, each, after a slight letting up, being followed by a stronger impulse, and so gradually and by zig-zag reaching the acme of a pain, when temporary exhaustion follows and uterine action ceases, to be renewed in another set of increasingly stronger contractile waves after a given period of rest.

By 8 A.M. dilatation was complete, when I ruptured the membranes to hasten expulsion. As heretofore, this stage was likewise devoid of any discomfort even to the mother; and as the head passed the vulva, half an hour later, a feeble "Ah!" of surprise was all that escaped her lips.

The mother is an epileptic and slow intellectually, but when married, eight years ago, was bright and entertaining. All her confinements have been painless. As her previous medical attendant expressed it, "She never has any labor, but simply exudes her child." Her first labor was called "precipitate," which is very questionable in view of this case as followed. At that time she was ignorant of all that pertained to maternity, and thinking her bowels wanted to be moved, took oil, was surprised at its rapid action, went to the closet, and there dropped the child. It must have been that dilatation was perfectly painless, descent, while also without suffering, giving rise to the sense of fulness in the rectum and desire to stool. Dilatation of the cervix I cannot imagine to be ever accomplished by a single pain. Is it not rather probable that precipitate labors are, as this first confinement must have been, painless in the stage of dilatation; and that then a single contraction suffices to complete the stage of expulsion?

II. *Early rupture of fœtal membranes, with persistent loss of amniotic fluid and continuance of pregnancy.*—Mrs. T——, aged twenty-nine, the mother of two children, had her last courses the closing days of 1887. In January she was not unwell, breasts hardened and began to itch about the nipples, and leucorrhœal discharge was present. Never having had any nausea in her previous pregnancies, she concluded she was again with child. February 15th, when seven weeks along, while at work rearranging her pantry, she felt a sudden gush of something warm, which proved to be blood. For me it only remained to urge the continuance of the precaution taken, of keeping bed, and to order acid drinks and cold food. For a few days a slight chocolate-colored discharge continued, but ceasing, she was allowed at the end of a week to sit up in bed. This again precipitated a slight flowing, which with rest in the horizontal position disappeared. The light brownish discharge persisted, so she remained recumbent for a full month, when permission to rise was granted. The rusty discharge continued, and three days later there occurred a third loss of blood; but being then only three months gone and sick at the prospect of keeping bed for six months, she took matters in her own hands and determined to keep about and risk loss of her conception. Bleeding therewith ceased, yet occasionally there would be a sudden gush of an almost colorless liquid. This usually occurred toward morning, and she said she could always tell if it were going to come, because the evening before she was conscious of a "trickling inside." The vessel, when used after these sudden gushes, deposited little reddish masses the size of a pin-head. Digital examination showed an enlarged and slightly elastic womb, with cervix softened and admitting the first phalanx of the finger, though the internal os was closed. I expressed the opinion that with loss of fœtal life consequent on the hemorrhages a mole had formed, and advised that, so long as her health continued good, she await the natural efforts of nature to throw it off; urging this because the breasts belied death of the fœtus, and I could only explain the case by the supposition of a double conception, with death and subsequent degeneration of what was one fœtus, and continued though checkered growth of the second.

On May 21st the patient insisted that, while the same state of things had continued, she felt movements. Examination showed that the womb did not correspond with a nearly five months' conception. It was broad below and so small that between the uterus and the umbilicus four fingers could be laid; yet, to my surprise, auscultation disclosed a fœtal heart.

June 12th.—Developments have led to a change of diagnosis; for, unusual as it may seem, we have to do with the ruptured amniotic sac of a living child. After two or three days free from any discharge, which has meanwhile become colorless and of an odor like that of the amniotic fluid at labor, the womb will be up, or even above, the depression of the umbilical cicatrix; and then, again, after leakage and flow, it is found contracted, reaching only half-way between the umbilicus and pubis, when fœtal movements become very perceptible to the patient, and also to the touch. The trickling and, later, sudden gushes of fluid in the early morning, after several hours of recumbency, have now given place to a more disagreeable loss of amniotic fluid at any time when in a sitting posture. The amount lost is remarkable. Lusk calculates the whole quantity collected during pregnancy at from one to three pints; but here the patient, in a short half-hour, will thoroughly soak five or six double napkins, the womb grow small; yet within twenty-four hours be high again and ready for another similar drain. This has been of daily occurrence during the past fortnight. By careful estimation of the amount of water necessary to soak the napkins as I have seen them, I find the daily loss cannot be less than from sixteen to eighteen ounces.

Only once has there been any disposition on the part of the womb to repel and expel its contents, and then not from the loss of amniotic fluid, but from a fright occasioned by an outbreak of fire in the next house. When, for the first time, the waters came away in an upright position, regular pains came on, and every preparation was made, only to be followed in a couple of hours by cessation of uterine activity.

June 20th.—No change, and nothing further to record than the continued loss of amniotic fluid in even possibly larger quantities, entailing marked variations in the size of the womb. Head down with back to the right is clearly definable on palpation.

July 4th.—Patient, yesterday, had a fall eight feet in height. She was much shaken up and thought labor would surely come on, yet it ended as on the previous occasion when a mental impression threatened to be the precipitating cause of miscarriage. Daily loss of fluid continues. Patient annoyed by the moisture and persistent use of napkins, but her general health is very good.

July 31st.—No diminution in flow. Amount some days, as I have often estimated approximately, reaches as much as eighteen and twenty-one ounces. For three days past the central portions of the saturated napkins have been stained with blood. To-night she complained of dragging sensations, and bearing-down pains. The womb was found close upon the fœtus and reaching only to an inch below the navel. Head no longer above the brim, but with examining finger encountered an inch from the vulva. Cervix well back, and internal os patulous, admitting two fingers, which could make out the sutures.

August 1st.—After all, she rested well last night, and in the morning said the womb was high again, though since rising the flow and bearing down had recurred.

August 2d.—Last evening had the same descent of the womb and its contents, but to-day the staining with blood has ceased.

August 8th.—The fact of persistent daily loss of large quantities of amniotic fluid, without provoking miscarriage, alone merits recording. Patient says she never felt better.

August 15th.—On the eleventh the city was visited by a sad calamity. The dam of a reservoir, on one of the hills, eight hundred feet above the city, broke and precipitated its waters down a ravine, carrying everything before it—trees, enormous bowlders, houses, and, of course, everyone in its way. There was frightful loss of life and great damage to property, as the torrent poured through one of the main streets of the town on its way to the sea. Mud

and débris reached to the patient's door. She saw some half-drowned persons crawling out of the wreckage, wounded and dead being removed, and had some of the unfortunates under her roof and care. By nightfall the bloody staining reappeared. Bearing-down pains in the back, and cramps in the legs were present, but all to no purpose. At irregular intervals these recurred till last evening, when the pains persisted. I saw the patient at 1 A.M.; os dilated to the size of a silver dollar. Dilatation was slow, and it was 7 A.M. before the os was fully open, when a few pains sufficed to expel the child.

The placenta came away in a quarter of an hour, showing along its rim a white, cicatricial-looking line where loosening had evidently occurred. There was nothing whatever to indicate a double conception, while the whole course of the pregnancy, absence of bulging membranes or loss of waters in the labor, clearly proved the diagnosis.

Rupture of the membranes is spoken of as a certain, though not always speedy, method of inducing labor. I once had a case where at the eighth month the waters drained away, but after a few days' rest the lady, a primipara, went by rail to her mother's house, a distance of one hundred and fourteen miles, and did not have her child till the completion of the ninth month; but I have never heard of a case where the membranes ruptured as early as the seventh week, and yet pregnancy continue uninterrupted so long. The tolerance of the uterus was remarkable, having defied a strong fright and fall, in addition to the constant escape of its fluid contents; and but for the circumstances attending the final onset of labor, I think that pregnancy might have continued to its natural limit.

The child, a male, weighed three pounds fourteen ounces, had nails developed, and for three weeks was unable to suckle. Still he had a robust look, did well, and has thrived. The only result of the abnormal conditions in which its uterine life was passed was a slight talipes varus of the right foot, which massage has corrected.

III. *A large haul.*—At 8 A.M., April 6, 1889, I was called to see Mrs. D——, a stout, large German, in labor with her sixth child, whose birth was due on March 27th. Children had all been large, between nine and twelve pounds. One, though a head presentation, had been lost through strangulation of the cord about the neck, as the midwife said.

The lady, a regular patient, had been advised to have me present, but delicacy about being attended by a man forbade. When I arrived the midwife said it had been an O. L. A., that head had been born three-quarters of an hour, and that she had been unable to effect rotation and extraction; that she had felt an arm displaced backward, and fancied it was the cause of obstruction. The head was in the antero-posterior position, with occiput beneath the arch. Child's face livid, without reflex on introduction of finger in the mouth, and no heart-beat to be heard. Having informed the husband that the child was dead, chloroform was administered. On then introducing the hand along the mother's left side, the posterior shoulder, the left one, could be felt in the cavity with its arm by the side of the body; while the right shoulder was jambed up against and above the pubic bone, slightly to the right of the symphisis, and was evidently the obstructing cause of delayed delivery. Some difficulty was experienced in trying to push the shoulder upward to relieve of pressure, and then forcible rotation of the head and shoulders to the right was effected, so as to bring the shoulders into the transverse position; but, even then, considerable effort was requisite to draw down and extract. The following measurements taken at the time may be of interest: Weight, 18 pounds 4 ounces; length, 61 ctm.; occipital-frontal circumference, 39 ctm.; breadth of shoulders, 23 ctm.; circumference of shoulders, 54 ctm.; circumference of pelvis, 42 ctm. I do not remember to have ever seen reference to obstruction arising from the position of the shoulders after birth of the head, nor to the necessity of forced rotation in a direction the opposite of that which would be the normal mechanism of delivery, but which is alone the practical plan when the shoulder gets fixed above the pubic bone.

A YOUNG LIVING FŒTUS.

DR. J. L. NASCHER, of New York, writes: "I was called to Mrs. N—— on May 7th. She was delivered of her first child, January 22, 1888. After May, 1888, her menses returned regularly, the last time on November 9, 1888. A number of circumstances put it beyond doubt that conception took place after November 15th. From November 15th to May 7th, nothing unusual occurred in her pregnancy. On the latter date she complained of a sudden gush of water and some blood from the genitals, followed by slight pains. It was impossible to prevent miscarriage, which occurred on the 10th, at 2 A.M. The child gave a few gasps and was laid aside while the mother was attended to. In a few minutes the child began to cry. It was at once wrapped up in cotton. A little fennel-tea, the nurse says three teaspoonfuls, was given, which the child eagerly took. This was at 4 A.M. At ten o'clock the child again received three spoonfuls. At noon pinkish blood oozed from the nose. The feet and body became cold, and the child died at 12.15, living over ten hours. It measured eleven inches, and weighed less than two pounds. The eyes were closed and could not be opened. The fontanelles were very large and high, beating so fast as to appear like a tremor. The heart beat so fast that I could not count it, while the pulse was not distinguishable. Even the nails were not seen. There is no doubt that this child was of less than six months pregnancy, and as such the case may be of interest."

Progress of Medical Science.

THE ACTION OF PARALDEHYDE.—Dr. John Gordon has published an experimental investigation of the action of paraldehyde, of which the following is a summary: 1. Paraldehyde caused an increase in the excretion of urea. 2. It did not in any marked way affect the quantities of chlorides excreted. 3. It did not invariably increase the excretion of the fluid constituents of urine, but in the majority of cases diminished them. 4. The odor of paraldehyde, when given in large doses, was found in the urine, showing that some of it probably passed unchanged through the system. 5. After the full dose of the drug the respirations were slowed, and rendered tranquil and steady. 6. It had no appreciable effect on temperature. 7. In cases of average health without sleeplessness it did not have any hypnotic influence except in large doses. 8. It caused no loss of appetite. 9. There was sometimes a tendency to perspiration under its influence, which atropine controlled. 10. The blood-pressure was only slightly reduced by the smaller doses, the large dose reducing it more, but only after distinct slowing of the respiration. 11. The pulse was slowed. 12. It diminished the reflex excitability of the spinal cord. 13. It had a peripheral influence in controlling sensation. 14. It speedily diminished, and in large doses destroyed, the irritability of motor nerves. 15. Equal doses diminished the excitability of motor nerves sooner than that of muscle. 16. Small doses first slightly excited and then diminished the excitability of muscle-substance. 17. Large doses speedily destroyed (temporarily) the irritability of muscle-substance. 18. There was a tendency to complete recovery in the muscle after a small dose, but seldom complete recovery after a large dose. 19. Curarized muscle showed increased excitability over non-curarized muscle when treated with an equal dose of paraldehyde and equally stimulated. The advantages of the drug as a hypnotic, to which group it distinctly belongs, depend on the following points: 1. It is not a cardiac depressant. 2. It has no marked period of toler-

ation, since in some cases of insomnia from overwork the drug has been taken in the same dose for some months with equally good hypnotic results. 3. No marked craving for the drug seems to be induced by its use. 4. It does not exercise, except in large doses, a hypnotic effect on a person not suffering from sleeplessness; hence there is no probability of its abuse. 5. It has not a marked period of excitement before the hypnotic action takes place. 6. Its action is speedy, patients generally falling asleep within ten minutes after its administration. 7. The patients may be aroused while under its influence without any disagreeable or confused sensation. 8. The sleep which it produces is tranquil and quiet, with diminished respirations; this slowing of the respirations in many pulmonary diseases is of distinct advantage. 9. It is not liable to disorder the digestion. 10. In many cases it is gently laxative in its action. From the experiments which were performed on the lower animals its use as a narcotic in cases of insomnia with slight pain is not contraindicated, since the author's experiments with frogs show that it controls, to some extent, the sensory nerves; and the experiments with cats prove that, in large but non-poisonous doses, it exercises a narcotic influence. And it is possible that, since a large amount of the drug is excreted by the lungs, its vapor may exercise a narcotic influence on the terminations of the sensory nerves of the lung-tissue while it is being expired. Dr. Gordon's method of prescribing is in doses of from 40 to 60 minims for adults, well diluted with cinnamon water, adding a little sirup of tolu and compound tincture of cardamoms.—*The Therapeutic Gazette*, April 15, 1889.

THE OPERATIVE TREATMENT OF PROLAPSE OF THE RECTUM.—Dr. Mikulicz has described his method of dealing with this affection and has put on record seven cases in proof of its safety and efficiency (*The London Medical Recorder*). Of prolapse of the rectum there are, it is pointed out, three forms. The first and simplest of these, prolapsus ani, is a mere ectropium of the mucous membrane of the rectum in which the other coats of the gut, especially the musuclaris, are seldom involved. In the second form, that of true prolapsus recti, the protrusion consists of all the coats of the intestine, and, like the invaginated portion in intussusception, presents on section two tubes of intestine, one within the other, and in contact by their serous surfaces. The third form, to which the name is given of prolapsus coli invaginati, is really intussusception of some part of the colon, and may be readily distinguished from the other forms by the fact that the external layer is not fixed to the anus, and that the finger can be passed into the rectum by the side of the protruded mass. In cases of chronic prolapsus recti, with ulceration and gangrene of the exposed mucous membrane, and a persistent tendency to further protrusion, excision of the protruded portion of the intestine is, according to Mikulicz, the most suitable treatment. The limited excisions devised by Dieffenbach and Dupuytren are, it is stated, often useless and do not guard against prolapse, and cauterization, though a milder proceeding, is still not free from risk and may cause stenosis of the anal portion of the gut. Partial excision and cauterization will, it is true, result in contraction of the relaxed and softened sphincters, and of the immediately superjacent portion of rectum, and the constricted and rigid extremity of the gut will, if the case be a mild one, resist further protrusion from above; but in too many instances the *vis a tergo* overcomes this resistance and the cicatricial tissue yields sooner or later to renewed prolapse of the rectum. It is necessary, he states, to shorten the elongated and displaced rectum, and, in correspondence with this indication, to resect a large portion of the prolapse. This is held to be the most rational course in all old cases of prolapsus recti, and particularly after relapse. The operation described in this paper was first performed with success by Nicoladoni, and resembles in some respects one advocated by Esmarch, in which, before resection, the upper part of the prolapsed gut is fixed tightly by ligature to a bougie introduced into the rectum so as to prevent any exposure of the peritoneal cavity. Mikulicz, after having passed two sutures through the free lower end of the prolapse, in order to stretch and fix in required positions the gut, makes a transverse incision through the anterior layer of the prolapsed mass, about half an inch below the anal margin. The inner tube of the prolapse having been thus exposed, the serous margins of the outer and inner layers are brought together by sutures, in order to shut off the peritoneal cavity. The inner tube having been divided transversely along the whole length of the outer incision, and the intestinal canal opened, the cut edges of the inner and outer tubes are then fixed together by a second row of sutures. The posterior surfaces of the tubes are then divided and sutured in like manner, and the whole of the prolapse thus detached. In most cases the peritoneal sac does not descend between the layers of gut behind, the space being usually occupied by the mesocolon which contains numerous vessels. In this operation Mikulicz insists on the use of silk in preference to catgut for the material of the sutures.

CHRONIC ARSENICAL POISONING.—In a contribution bearing on the wholesale arsenical poisoning which occurred last year at Hyères (France), in consequence of the accidental substitution of white arsenic for gypsum in wine, Dr. Duhrandy summarizes the general effect observed among the victims of the error (*The London Medical Recorder*). Upward of four hundred suffered to a greater or lesser extent, and several cases proved fatal. *A. Digestive apparatus.*—Gastric derangement was the first symptom in every case; many patients suffered from nausea, vomiting, and diarrhœa, but in most instances these soon passed off, a sort of tolerance being established. Their duration varied from one to four days. In other cases dryness of the mouth and fauces, or ptyalism, with retro-sternal and epigastric constriction, were complained of, though seldom to such an extent as to necessitate recourse to a medical man. *B. Respiration.*—Acute bronchial catarrh was an early symptom with many of the patients, following the digestive disorders. It was more persistent and constituted a sort of second stage of the toxic phenomena. The symptoms, as a whole, bore much resemblance to ordinary influenza, but the secretion was less abundant and there was marked motor and sensory disorder (lassitude, prostration, tingling, etc.). *C. Muscular system.*—The muscular weakness varied in intensity from simple weakness of the muscles of locomotion to complete paresis. This, however, was not due to paralysis but to lack of nervous energy. Some patients, nevertheless, exhibited paralytic symptoms of an ephemeral nature. The patellar reflexes were diminished or abolished, and this still persists in certain of the victims. *D. Sensory.*—The disorders of sensibility were universal though of variable intensity. They were exceedingly obnoxious to treatment, and consisted in tingling in the extremities, with loss of tactile sensation and pain. The pain complained of was headache, pleurodynia, shooting pains in the limbs, etc. The latter were, in some instances, so severe as to prevent sleep. Many complained of a sensation of heat internally, especially distressing at night. Tactile sensation was sometimes dulled, sometimes hyperacute, at others a blend of the two. The special senses were less frequently affected, but in some cases deafness, with or without noises in the ears, was complained of. In two instances fetid sweats were noticed.

THE PLACE OF SACCHARIN IN PHARMACY.—Under this title Dr. Attfield has published a pamphlet in which he shows how saccharin may be most advantageously employed in the compounding of numerous pharmaceutical preparations, reducing very considerably the bulk of some and rendering others much more palatable.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE HEALTH OF JOHNSTOWN.

THE Johnstown calamity has had its horrors presented from many points of view. Flood, fire, devastation, and death have accentuated its different aspects until the high lights of the dreadful picture seem to have borrowed their tints from a yawning inferno. No description can probably do justice to the experience of the awful hours when rushing torrent and hissing fire fought for the mastery with death. Now that all this part of the dreadful drama is over, when the waters have again found their level, when the town is a mud-flat and its dead buried in the jam of trees, timber, roofs, and rubbish, the serious thought of the dazed survivors centres upon the difficulties of repairing damages and making a fresh start. Thanks to the generosity of the public there will be no want of funds to make this pecuniarily possible. In the meantime there is much to be thought of bearing upon the present and future welfare of those who are left. Time is required to clear away the immense accumulation of débris. Already fears are expressed as to the safety of this stricken people from disease and further desolation consequent upon the accumulation of putrefying bodies in the ruins. Happily there is but little cause as yet for grave anxiety.

The difficulties, great as they are, in the way of extricating the bodies are not insurmountable, and it is to be hoped that in a few days more the pressing problem will be satisfactorily solved. Many theories have of course been advanced as to the dangers of water-pollution, of typhoid, and other fevers, but such theories are not founded upon sufficiently scientific data to give them due weight. The situation is bad enough, but it must be conceded, if we know anything of the etiology of typhoid, that there should be no fear from the ordinary decomposition of human bodies. Unless the typhoid germ is present in one or more of the submerged bodies, it is perfectly safe to assume that typhoid fever will not appear, no matter how much the water may be otherwise polluted. The same may be said of other essential fevers. It is quite possible also that the pollution of the stream will not be so great as is supposed. Submerged bodies do not decompose as rapidly as those exposed to the air, and the products of decomposition are different and less dangerous. The fact that running waters purify themselves by oxidizing and depositing decomposed products is a well-recognized one, and serves to explain the immunity of villages that are supplied by distant but polluted sources. While such a condition of things is not desirable on æsthetic grounds, there is still some comfort in its contemplation in connection with a more than ordinary stream-pollution, and a desire to hope for the best, even in the present emergency.

In reference to the bodies themselves, there is nothing to be done but to remove and bury them as quickly as possible, as disinfecting them or destroying them by fire is now out of the question. The more rapidly this work goes on the better. What is perhaps more dangerous to the surviving population than water-pollution, or anything that can come directly from emanations, are the depressing effects of the exposure, privations, and sorrow which have been so much a part of the experiences of that great calamity. The shock of the ordeal has doubtless left its mark upon the majority of those who have passed through the dreadful trial. It has already shown itself in the general air of melancholy which prevails, and in the lowering of the vital energies which is becoming more and more apparent. A people in such a condition would invite malignity or a high death-rate for any sickness, should the latter once get a start. Fortunately, this region is reported to be still free from any indications in that direction, and it is gratifying to know that, whatever emergency may arise, there are generous hearts and willing hands reaching toward the ill-fated valley from every portion of the country. The present sanitary arrangements are beyond criticism and are accomplishing all that can be expected, medical aid is plentifully supplied, and the hospital arrangements are in every way excellent. Therefore let us be patient and hope for the best.

THE DIFFERENT MODES OF TUBERCULOUS INFECTION.

SINCE the establishment of the specific character of tuberculosis, much attention has been paid to the various and peculiar ways in which it may invade the system. While the lungs and alimentary tract are the chief and primary areas of attack, it has been shown to develop in many other curious ways. It has been shown that post-mortem sores are, as a rule, forms of local tuberculosis. The case is reported of a woman who contracted tubercle of the skin of the hand from washing the clothes of her tuberculous husband. Another case is reported of tuberculosis of the genital organs resulting from a circumcision, in which the wound was sucked by a tuberculous operator. Dr. Finger has reported a case of apparently general infection as the result of a tuberculous dissection warts. From two different sources—Drs. Spillman and Haushalter, of Paris, and Hoffmann, of Dresden, it has been made probable that flies can swallow and carry with them the active contagion of tuberculosis.

The question whether tuberculosis can be directly inherited, *i.e.*, that an infant can be born with bacilli in the tissues derived from the mother or father, is still unsettled. If the fœtus is infected, it is safe to say that it is not through the ovum or spermatozoa, but through the placental circulation. Johne claims to have proved placental infection to exist in the cow; and Baumgarten, as well as some others, affirm that a child may be born with bacilli tuberculosis in its tissues, which may remain latent for years, or even during the lifetime. Landouzy and Martin have

caused tuberculosis by inoculating animals with the placenta of tuberculous patients.

There is considerable evidence, therefore, to show that tubercle may be directly inherited from the mother, but never from the father. And the great probability is, that instances of direct inheritance of tubercle are very rare indeed.

Dr. Mosler, of Greifswald, has tried to induce intestinal tuberculosis by feeding animals with tuberculous matter. He failed, but claims that a patient who was suffering from pulmonary tuberculosis infected her intestinal tract by swallowing the sputum. The results of investigations regarding the susceptibility of the alimentary tract to contagion are, on the whole, not such as to justify alarm. According to Nocard, the meat of tuberculous animals is a pretty safe food. Since even tuberculous cows do not always have tuberculous mastitis, the danger from milk infection is not great.

Now that attention is being so actively directed to preventing phthisis, as well as relieving and curing it, suggestions of the most various and unique character may be expected. Dr. Z. Petresen, of Buda-Pesth, has devised an inhaler, something like the nargileh, or water pipe. Instead of water, the following solution is used:

℞. Eucalyptol,
Creasote,
Olei terebinth ..... āā 2.0
Iodoform 0.1
Aquæ destil 100.0
M. Sig.—For two days' inhalation.

Persons predisposed or exposed to phthisis are advised to inhale air drawn through this mixture, daily. It is believed that it tends to saturate the system with the antibacillary agents. The same fluid may also be used more conveniently in the small nasal inhalers, such as were described and introduced here by Dr. Beverley Robinson.

BURIED ALIVE.

THE belief that people are ever nowadays buried alive, or ever have been, except for criminal or judicial purposes, is one that is widespread, but also one that has very little foundation in actual fact. We venture to say that there are not in history any authentic records of cases of burial alive, where the deceased has been carefully examined by physicians, or even by intelligent friends. Of recent evidence of burial alive, there is certainly nothing of value. The *Medical Press and Circular* of May 13, 1874, reported the premature burial of a woman, six hours after supposed death. But no evidence that the woman was not dead is given. The *British Medical Journal* of January 21, 1871, cites the case of an infant that was *nearly* buried alive, but was heard to cry in its coffin. Here, too, the evidence as to the validity of the facts is wanting, while in effect the child was not buried alive. Another recent case occurred at Naples, in 1871 A woman in a state of trance is said to have been buried alive. The Court sentenced both the doctor who signed the certificate, and the Mayor who permitted the interment, to three months' imprisonment for "involuntary manslaughter."

If these and other cases are analyzed, it will be found either that there was no proof of the premature burial, or else there was gross carelessness and criminal haste on the part of attendants.

The belief in burial alive should disappear with the belief in ghosts and other "bugaboos." It is, of course, possible that persons may be buried alive through some criminal conspiracy, or through some manifestation of monumental incapacity on the part of friends; but such contingencies can be easily avoided in modern life.

LAURA BRIDGMAN.

THE recent death of Laura Bridgman has called out a great many reminiscences of this remarkable woman. We do not at this day realize the intense interest which her case at one time aroused; and certainly there has been no reference, so far as we know, to the important data her history furnishes to pedagogy and psychology. The general facts regarding Laura Bridgman are well known. How, at the age of twenty-six months, she lost entirely her sense of sight and hearing, and to a great extent her sense of smell and taste; and how, until she was eight years of age, she received no attempts at education. At this time, it is known that she had quite lost all memory of her life before her sickness; she retained, absolutely, no visual or auditory memories. Dr. Howe's success in teaching her to talk with the hands, to write, read, etc., is also a familiar story.

Most interesting now to medical men is a study of her physiological and psychological condition, made by Professor Stanley Hall, just ten years ago. He found her totally unable to see or appreciate sensations of light from any kind of stimulus. Her deafness was equally complete; but she could appreciate different kinds of vibrations, and even knew her friends by their step. This must have been done, however, by the tactile or muscular sense. Her sense of smell and that of taste were dull.

The tactile sense showed the most acute and remarkable development, and, as recorded by Hall, was as follows:

Tip of tongue	$\frac{1}{50}$ inch.
Tip of right forefinger, volar surface	$\frac{1}{25}$ "
Hips	$\frac{1}{10}$ "
Tip of second finger	$\frac{1}{7}$ "
Tip of third finger	$\frac{1}{6}$ "
Tip of fourth finger	$\frac{1}{13}$ "

The sensitiveness of the face at various parts was also very great, and the measurements in general showed an acuteness of touch two or three times greater than the average.

But the ordinary tests made with the artheriometer gave no adequate idea of her exquisite contact-sense, which amounted to a kind of normal hyperæsthesia, so that even specks of dust alighting on the face and hands were appreciated and annoyed her. Curiously enough, her temperature-sense was below the average, and the same was true for pressure sensations and electrical irritations. Her tactile memory was so extraordinarily developed that she could at once recognize friends whom she had not seen for a long time by a touch of the hand. Her muscle-sense, so far as it could be tested, was not unusually acute. The sense of equilibrium and of direction was very well developed. Curiously enough, she was easily made dizzy and even nauseated by movements of rotation; and it was thought that possibly the semicircular canals were not destroyed by the disease which destroyed her hearing. Yet this seems somewhat improbable.

A very careful inquiry showed that the sexual instinct failed to mature, or show itself in any specific way. She never acquired any notion of the ways and means of its gratification. Although the strongest of human instincts thus failed to develop itself, yet with very little teaching there did develop fresh and original intuitions as to the nature of God and a first cause, and as to her personal responsibility and sense of right. It is encouraging to human progress to know that moral and religious instincts may spontaneously develop and dominate rather than the sexual.

News of the Week.

SCIENCE AND POLITICS AND THE PARIS EXPOSITION.—There is, it appears, in Berlin a society composed of surgeons of the army reserve, and presided over by one Herr Wasserfuhr. This society has voted that its members abstain from taking part in the numerous scientific congresses to be held in Paris this summer, in connection with the Exposition. This decision is thought simply to indicate a desire on the part of Bismarck to have Berlin physicians "boycott" the Paris show. Naturally, our French contemporaries are somewhat indignant, and in justice it should be said that many Berlin physicians regret the action taken by their colleagues as most unwise.

M. DUPRAT, well known as a physician, littérateur, and musician and composer, died recently at Paris, aged sixty-five.

A MEDICAL PRESS ASSOCIATION has been organized in France. It is composed of the editors and proprietors of the numerous medical periodicals of that country. It meets three times a year, when business is transacted and a "confraternal" dinner is eaten.

THE "MEDICAL PRESS OF WESTERN NEW YORK" is to be consolidated with the Buffalo *Medical and Surgical Journal*.

CLARK UNIVERSITY.—The first announcement of the opening of this university has been issued. Teaching will be given in mathematics, physics, chemistry, biology, and psychology. The teachers in biology and psychology are Professor Hall, Dr. H. H. Donaldson, Dr. E. C. Sanford, Dr. Warren P. Lombard, and Dr. F. Mall.

THE GREATNESS OF CHICAGO is constantly asserting itself in some unique way. One of its medical colleges has recently graduated, to put it euphemistically, a colored medical lady.

THE STUDY OF THE PROPHYLAXIS OF PHTHISIS is developing some novelties. Among these is a pocket spit-cup, made of glass, and holding about three ounces. It was devised by Dr. Dettweiler, of Frankenstein. It obviates the necessity of using the handkerchief, or the carpet.

A MEDICAL REGISTRATION LAW IN OREGON.—Governor Pennoyer, of Oregon, has decided to allow the Pope bill regulating the practice of medicine to become a law without his signature. This law provides for "three persons from among the competent physicians of the State," to "issue certificates to all who shall furnish satisfactory proof of having received diplomas or licenses from legally chartered medical institutions in good standing, of whatever school or system of medicine."

THE BISHOP AUTOPSY.—Drs. J. A. Irwin, Frank Ferguson, and H. Hance were arraigned in Court on Tuesday, on indictments for misdemeanor, found against them by the Grand Jury for "unlawfully making a dissection of the body of Washington Irving Bishop, on May 13th, without authority of law, and not in pursuance of permission given by the deceased." They pleaded not guilty, and were each held in $500 bail.

BROOKLYN PHYSICIANS INDICTED.—The attacks of a certain Brooklyn paper upon Dr. Mary Dixon Jones and her son, Dr. C. N. D. Jones, have culminated in an indictment by the Grand Jury, and in throwing a serious cloud over the reputation of these heretofore highly esteemed physicians. While we have not all the evidence of the case before us, we know that most of the charges are utterly false. From the known standing and skill of the accused, it is very safe to infer that they are the victims of misrepresentations and unfair charges. We feel sure that a trial will exonerate the Drs. Jones, and meanwhile we trust that the profession of this city and Brooklyn will extend to them support and sympathy.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION holds its Sixth Annual Meeting in Boston, June 24 and 25, 1889, under the presidency of Dr. V. Y. Bowditch. The following programme is announced: Address by the President, Dr. V. Y. Bowditch, Boston, "Comparative Results in Ninety Cases of Pleurisy, with Special Reference to the Development of Phthisis Pulmonalis;" "A Study of the Summer Climate of the Massachusetts Coast," by Dr. William D. Hodges, Boston; "Reports of Cases of Acute Miliary Tuberculosis," by Dr. John C. Munro, Boston; "The Mortality of Acute Lobar Pneumonia: A Study of all the Cases treated at the Massachusetts General Hospital, from the First Case in 1822 to the Present," by Drs. C. W. Townshend and A. Coolidge, Jr., Boston; "Consumption as I have known it," by Dr. E. P. Hurd, Newburyport; "The Influence of Climate and Season upon Normal and Abnormal Manifestations of Nervous Activity," by Dr. Walter Platt, Baltimore; "Open-air Travel as a Cure and Preventive of Consumption, as illustrated in the History of a New England Family," by Dr. Henry I. Bowditch, Boston; "Rest and Exercise in Diseases of the Heart," by Dr. A. L. Loomis, New York; "The Basis of Rational Climato-therapy," by Dr. Griffith E. Abbott, Bryn Mawr, Pa.; "Ocean Therapy," by Dr. Albert L. Gihon, Surgeon, U. S. N.; "The Vital Statistics of Two Thousand Persons in an Ocean Atmosphere," by Dr. A. N. Bell, New York; "The Psychological Factor in selecting a Climate for Invalids," by Dr. E. O. Otis, Boston; "The Wakefulness of Neurasthenia as affected by a Residence at the Sea-side," by Dr. W. H. Daly, Pittsburg, Pa.; "The Relations of Sandy Soil and Pine Forests to Pulmonary Phthisis, with Special Reference to the Pine Belt of New Jersey," by Dr. Isaac H. Platt, Lakewood, N. J. *Discussion*—Hæmoptysis from Chronic Pulmonary Disease: "Pathology," by Dr. G. M. Garland, Boston; "Clinical Significance," by Dr. J. T. Whittaker, Cincinnati; "Climatology from Stand-points of Etiology and Therapeusis," by Dr. R. G. Curtin, Philadelphia; "Other Treatment," by Dr. J. B. Walker, Philadelphia; "Remarks on the Treatment of Pulmonary Phthisis," by Dr. J. C. Wilson, Philadelphia.

THE PENNSYLVANIA STATE MEDICAL SOCIETY, which was to have met last week at Pittsburg, was obliged, on account of the floods, to adjourn its meeting until September.

REGARDING THE DEATH OF DR. CRONIN, *The Medical Standard* says, "The absolute control which politicians have over charitable institutions is such that everything that stands in the way of their spoils must be got rid of. The man who has the hardihood to stand up against existing abuses is marked for slaughter. This has been recently exemplified by deep conspiracies in this city, which have led to the murder of one physician and the deliberate attempt to ruin the character of two others, each of which comes under the head of political crime. That the murder of Dr. Cronin was for political purposes no one doubts."

THE NEW HAMPSHIRE STATE MEDICAL SOCIETY holds its ninety-eighth annual meeting at Concord, on June 17th and 18th.

THE POPE'S PHYSICIAN.—Dr. Giuseppe Lapponi, a young and distinguished graduate of the Bologna school, has just been appointed body physician to his Holiness Pope Leo XIII., in succession to Dr. Valentino, deceased.

Obituary.

JAMES B. HUNTER, M.D.,

NEW YORK.

ON Monday, June 10th, at his residence in this city, died, in the prime of life, one of our leading gynecologists, James Bradbridge Hunter.

Dr. Hunter was born of English parents, in Geneva, N. Y., April 30, 1837. At the time that the Civil War broke out, in 1861, he was studying medicine in Cincinnati, but he immediately abandoned his studies and volunteered, joining the Sixth Ohio Regiment, and soon rose to the rank of first lieutenant and adjutant. Afterward, having passed the examination of the Army Medical Board, and received his diploma, he exchanged to the Medical Staff, and was assigned to the Sixtieth Indiana Regiment as Assistant Surgeon, later becoming Surgeon, and with this he saw active service under Grant at Vicksburg and other points. Upon the close of his connection with the army he graduated at the College of Physicians and Surgeons, in this city, in 1866, and afterward continued his studies at the Moorfields Hospital in London. At this time he was studying with a view to becoming an oculist, an intention which he afterward abandoned and identified himself with the field of gynecology. He was appointed House Surgeon to the Woman's Hospital in this city in 1867, and after serving his term in that capacity became Assistant Surgeon to the same institution in 1871. This position he held until his appointment by the Board of Governors, in 1878, as Attending Surgeon to the Hospital.

At the time of his death he was Attending Surgeon to the Woman's Hospital; Visiting Surgeon to the Cancer Hospital, of which he was one of the founders; and Professor of Gynecology in the New York Polyclinic.

He was for many years very successful as the editor of the *New York Medical Journal*, but the increasing demands of practice upon his time obliged him to abandon all literary work.

Dr. Hunter's career presents a very striking example of success attending upon late development; achieved by a reserve force, the existence of which was long unrecognized; accomplished even after the competitor had apparently given up all intention of striving for it. Up to the year 1871, when, at the age of thirty-four, he was appointed Assistant Surgeon to the Woman's Hospital, he gave almost all his time to literary work and evinced little desire to accumulate a practice. That event appeared to arouse his dormant ambition and to stimulate his energies. His whole soul was henceforth thrown into his work; no effort was too great; no sacrifice too exacting if by it he could advance his knowledge and experience in the department to which he had now completely devoted himself, and before many years had passed he had acquired a skill as a diagnostician and an ability as an operator which made his name very generally known to the profession and the public.

In the spring of 1882 he married Miss McPherson, of Frederick, Md., and during the seven years which have elapsed since that time it is safe to say that the practice, the reputation, and the increasing skill of no one in the profession of medicine has more rapidly and steadily advanced. Nor will any who are familiar with the facts dispute the assertion that at the time of his death he stood well forward in the ranks of gynecology as a practitioner, as a teacher, as a writer, and as an operator. Success came to him late, but it came to him in the day of his full maturity and assured mental force, and it found him well-poised, cautious, and prepared. Had life been spared to him, the end of the next decade would have seen him among the very leaders of his specialty.

By nature reserved, reticent, and undemonstrative, he was not one to have many intimates; but by those who were brought into close contact with him he was much beloved. He was true to his friendships; faithful and devoted; uncompromisingly loyal to all who possessed his affection. In times of trial the tenderness which he would display was a marvel to those who had not previously seen this characteristic tested, and there were no limits to the gentle, loving sympathy which the sufferings of others would call forth. At such times he was truly as gentle as a woman, strong and stern man as he seemed to be in the eyes of the world.

In no calling in existence are charity and kindness to the poor so constantly, so lavishly, and so unobtrusively bestowed, not excepting even in the far nobler profession of divinity, as in medicine! And yet, even in this lavish field, his quiet, unostentatious, almost morbidly secret, bestowal of aid to the needy and suffering were quite remarkable. In his efforts but one thought seemed especially to occupy his mind—the desire to leave no trace by which his acts could be known to the world.

He was faithful to every duty in life allotted to him. As a writer he was cautious in expression, candid in statement, and attractive, though not brilliant in style. As a teacher he was dististinguised by the same characteristics. He always held his classes even when following more experienced teachers in his efforts; and he did so, not by eloquence or by oratorical display, but by honest teaching and laborious demonstration.

No one can tell why any man succeeds as a practitioner. The cause of success in this cannot be weighed in the balance of criticism. Whatever the secret of it may be, Dr. Hunter showed during the last decade of his life that he possessed it in a decided degree.

As an operator he was cautious, without timidity; bold, without recklessness; conservative, without prejudice against progress. His motto seemed to be:

> "Be not the last by whom the new is tried,
> Be not the first by whom the old is thrown aside."

The loss of such a man cannot but be felt by the profession which he adorned, the community for which he labored, the many friends who knew his worth and loved him for his virtues. In a great city like this the profession of medicine is full; but not of such men as this! The demand of the public for physicians is more than supplied; but not with such material! Even in this whirl of metropolitan life, activity, and energy, his loss will be felt; even here it will be long ere the memory of this good man will fade away.

T. G. T.

Society Reports.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Eleventh Annual Congress, held in Washington, D. C., May 30, 31, and June 1, 1889.

FIRST DAY, THURSDAY, MAY 30TH—MORNING SESSION.

THE Association was called to order by the President, DR. ETHELBERT CARROLL MORGAN, of Washington, who delivered the

PRESIDENTIAL ADDRESS,

expressing the profound pleasure which he experienced in welcoming the Association to the national capital, the home of the scientific libraries, laboratories, and museums fostered and encouraged by a liberal government. The Association had wisely followed in the wake of numerous other scientific bodies, which make pilgrimages to our city and exert a healthy influence toward popularizing their special fields of scientific investigation. The noble work of this Association during its eleven years of existence has resulted in placing laryngology upon a substantial basis, and in demonstrating its truths and benefits alike to the profession and to suffering humanity. The outlook for laryngology was never brighter than at present.

The tenth volume of the "Transactions" is now in press, and in addition to the papers read at the last meeting of the Association, contains a table of contents of all the papers read to the Association since its organization.

An important amendment to the constitution, increasing the limit of active fellowship, comes up at this meeting. The present limit is fifty, and there are at present no vacancies.

Our library now contains nearly nine hundred separate titles. The librarian thinks that the collection would be more accessible if in charge of the Surgeon-General's Office, and recommends its donation to that library.

The Association has lost no members by death since the last meeting.

After some suggestion in regard to the social features of the annual meetings, the President closed by reiterating the assurance of his heartfelt appreciation of the goodwill and friendship which influenced the Association in selecting him as the President of this distinguished body.

The President then read the report of a case of

REMOVAL OF A SUPERNUMERARY TONSIL,

with specimen and drawings.

The patient, a male, aged twenty-six years, vigorous and otherwise healthy, came under observation September 7, 1886, with what he feared was malignant disease of the pharynx. The growth was first discovered four years previous. It had occasioned considerable pain, especially after smoking. During the past two months the growth had rapidly increased in size, and the pain had become of a shooting character, extending to the ears, larynx, and top of the head. Examination revealed a pendant tumor between the right palatine folds near the uvula and protruding beyond their borders half an inch. The tumor was as large as a small almond. Its color, as well as that of the pillars, was a dusky red. Slight engorgement of the cervical glands appeared to exist. The patient's mother had died of cancer of the breast, and he felt convinced that the growth was malignant. Local and general treatment having no effect, the tumor was excised and the raw surface cauterized with the galvano-cautery. In ten days the wound had healed. The patient was recently examined and there has been no recurrence, now four years after the operation. The specimen removed was examined by Dr W. M. Gray, microscopist to the Army Medical Museum, who stated that its structure was identical with that of a faucial tonsil which had undergone hypertrophy. The location and microscopic characters of this tumor, as well as the history of the patient prior to and subsequent to operation, proves that this was a hypertrophied accessory or supernumerary tonsil, an exceedingly rare anomaly. A search of the literature had revealed only two other cases of a similar character, reported by Jurasz in 1885. In the first case the tumor was as large as a hen's egg, and was found to spring from the lower anterior portion of the right posterior pillar by a small and short pedicle. It was removed and found, on microscopical examination, to present the structure of a hypertrophied tonsil. In the second case the tumor was of the size of a hazel-nut, and attached below the right tubal prominence. The microscope revealed a structure similar to that of the faucial tonsil.

Conclusions.—1. The lymphoid follicles of the soft palate and pharynx are liable to be aggregated, resembling in arrangement the faucial tonsil. 2. The condition is exceedingly rare, since, excepting the so-called "pharyngeal tonsil," the author had found but one case reported. 3. These lymphoid follicles are also liable to hypertrophy. 4. Such hypertrophies probably occur oftener than is generally supposed. 5. The indications for operative interference in this condition are identical with those for the faucial tonsil.

DISCUSSION.

DR. D. BRYSON DELAVAN, of New York, thought that possibly cases of supernumerary tonsil were not so infrequent as was commonly supposed. Pedunculated tumors of the tonsil, which on examination show a fibroid structure, are not rare, and it may be that these are degenerated supernumerary tonsils; just as the tonsil may, from long-continued inflammation, become the seat of fibroid change.

DR. GEORGE W. MAJOR, of Montreal, Canada, read a paper entitled

THE RELATION BETWEEN FACIAL ERYSIPELAS AND ERYTHEMA ON THE ONE HAND, AND INTRANASAL PRESSURE ON THE OTHER.

The following cases were cited as showing that facial erysipelas may be produced by nasal conditions, particularly when they are productive of pressure.

CASE I.—A girl, aged twelve, came under observation in March, 1884, for the treatment of nasal catarrh. There was a general hypertrophic condition, with pressure of the middle turbinated body of one side against the septum. On the cheek bone of the same side there was a red patch of erythema, which had existed for five months. Treatment of the nasal condition by scarification, puncture, and galvano-cautery was followed by disappearance of the erythematous rash, and it has not returned.

CASE II.—A child, four years of age, was seen in February, 1885, suffering with facial erysipelas, commencing on the bridge of the nose and extending to the cheeks. It had already lasted five days, and was not disposed to yield to treatment. Both nostrils were occluded by swelling. All treatment directed to the relief of the erysipelas was suspended, and attention directed to the relief of the nasal condition. In twenty-four hours the erysipelas had disappeared.

CASE III.—In the winter of 1884, a boy, aged twelve, the subject of recurring attacks of erysipelas, was seen with an attack involving the nose and cheeks. Nasal injections were alone used, and the erysipelas disappeared in thirty-six hours.

CASE IV.—February, 1889, a female, aged fifty-six, presented herself with an erythematous patch on the left cheek. This had lasted four months. There was swelling of the left turbinated bone, which pressed against the septum. Under treatment of the nose the erythema disappeared in the course of a week. Six other cases were alluded to in which the same connection was seen.

DISCUSSION.

DR. J. O. ROE, of Rochester, N. Y., had seen a number of cases of erythematous rash due to the nasal trouble. A case recently seen was that of a girl, aged twenty-three.

There was a very red erythematous patch on the face, associated with blebs. She had been treated by various physicians without benefit. In both nares the middle turbinated bodies pressed firmly against the septum. This was relieved, and there was immediately a subsidence of the erythematous trouble. He, however, could not admit that erysipelas is due *per se* to the intranasal trouble. He held that erysipelas was an infectious disease due to a distinct germ. The presence of erosions in the nasal cavity would render the patient more liable to become infected.

Dr. J. N. Mackenzie, of Baltimore, Md., said that the relation between erythema of the nose and face and intranasal trouble had been recognized centuries ago in the times of Willis, and by Sylvius. He himself had seen many cases of this kind, but he had never seen true erysipelas due to this cause. So-called facial erysipelas seems to be comparable to an accentuation of the act of blushing—a sort of chronic blush.

Dr. William H. Daly, of Pittsburg, Pa., was not a believer in the theory of intranasal pressure. The evils referred to pressure are really due to intranasal turgescence. The condition of erythema is nothing more than a condition of hypernutrition, due to a permanently dilated and enlarged blood-supply. He believed that the term chronic facial erysipelas is a misnomer.

Dr. F. I. Knight, of Boston, Mass., remarked that in these cases of erythema of the nose and face he always looked for neurosis, and very often found it. Where the trouble has been relieved, the affection of the skin has disappeared.

Dr. D. Bryson Delavan, of New York: I have seen several of these cases, and in three or four the erysipelatous attacks have been severe. One, a girl, aged seventeen, had recurrent attacks of severe erysipelatous swelling from the alæ of the nose extending over the cheek. These recurred at intervals of two or three weeks. There was marked turgescence of the nasal nervous membrane. This was treated topically, and with the subsidence of the catarrhal trouble the attacks of erysipelas disappeared.

Dr. Samuel W. Langmaid, of Boston, Mass., read a paper entitled

A CASE OF ACUTE MULTIPLE ADENITIS (SEPTIC?), ŒDEMA OF THE LARYNX, WITH SPONTANEOUS CURE.

The reader was called to see a lady, aged forty, who had been sick for seven days, under the care of an irregular practitioner. The patient was found restless, with an anxious expression, breathing with difficulty, and with a dry, croupy cough. There was no lividity of the face, but it was stated that during the preceding twenty-four hours there had been danger of strangulation. The submaxillary glands, as well as those in the region of the neck, were much swollen. Temperature, 99°; voice fairly loud and clear; no enlargement of the tonsils; nothing unusual in the naso-pharynx. With the laryngoscope a tumor, apparently as large as a filbert, was seen occupying the posterior arytenoid space. The anterior third of the vocal cords could be seen approximated and scarcely moving during respiration. I learned that the throat had not been examined until four days after the commencement of the attack. As the patient was breathing fairly well it was decided to do nothing. If necessary, the tumor in the larynx was to be incised. A few hours later something was felt to break in the throat, and a free mucoid discharge took place. Three hours later nothing could be seen but the erect epiglottis, with muco-purulent matter welling up. There was a continued discharge, but the relief to breathing was not complete. There had been also the discharge of half an ounce of pus. The discharge continued for several days, and the patient gradually recovered.

It was thought that the case was in all probability due to diphtheria, the evidence of which had passed away when the author examined the throat. The patient stated that at the commencement of the illness the throat had been sore, and that on one side she had noticed red spots, on which there had been a white covering.

Dr. William C. Glasgow, of St. Louis, Mo., followed with a paper on

AN ŒDEMATOUS FORM OF DISEASE OF THE UPPER AIR-PASSAGES.

The paper described an œdematous form of disease which had been epidemic around St. Louis for some two years. During the existence of this affection there has been a disturbance of the ordinary catarrhal throat troubles. In all cases of this disease there is found a pale, œdematous condition of the fauces. This is a solid œdema. A peculiar glistening appearance is at times very marked. In the majority of cases the soft palate is the seat of the œdema. At times the nasal mucous membrane is found in the same condition. The epiglottis and different portions of the larynx may be involved. In some cases the true cords are markedly œdematous. A swollen condition of the veins, particularly the pallatine veins, is present. This sometimes causes purpura-looking spots, and the mucous membrane appears mottled; in two cases these purpura-looking spots had been seen in the trachea. In one case enlarged veins were seen on the true cord. In some cases ulceration occurs. In some cases, in addition to œdema, there were patches of exudation in different parts of the throat. These, when removed, leave a bleeding surface. The symptoms of the disease and the appearance of the throat preclude the diagnosis of diphtheria. In six cases spots of mycosis were seen. Glandular enlargement of the neck is quite frequent. In two cases suppuration occurred.

The symptoms are constitutional and local. The affection occurs suddenly in persons of previous good health. There is languor and weakness, and general pains throughout the body. Headache is present, usually frontal, sometimes occipital. In many cases it is simply a dull, heavy feeling; in others it is an intense, violent, throbbing pain. Pain in the back, in the region of the sacrum, is a characteristic symptom. Fever is present in varying degrees. In the exudative cases the disease commences with chill followed by fever, and the temperature may reach 105° F. This soon passes off and we have a subfebrile condition remaining, possibly with a temperature of 101° F. This continues a short time, and then there is a return to the normal temperature. When there is simply œdema, the temperature scarcely ever rises above 101–102° F. This remains for only twelve hours, and during the remainder of the attack the temperature is normal. The pulse is always rapid, soft, and compressible. There has been no exception to this noted. The pulse ranges between 90 and 110 per minute. Profuse sweating is often present, especially during the night. It may be localized.

The local symptoms vary with the part of the throat involved. Sometimes they are prominent, sometimes they are wanting. Hemorrhages are common. They are usually slight, but recur frequently.

This is a constitutional disease due, the author believes, to some change in the blood, exactly what he was unprepared to say, but probably due to micro-organisms. He thought that the disease described was nothing more than influenza, the same influenza which has been described so often, particularly by Graves. The disease has not been limited to the Mississippi valley, for the speaker had seen cases of it from all parts of the country.

The treatment is very simple. The system must be saturated with benzoate of sodium. Under this remedy the affection subsides in a few days or hours. If left to itself, it may continue for weeks and even months.

DISCUSSION.

Dr. W. H. Daly, of Pittsburg, Pa., had seen a number of cases similar to those described. He did not consider the condition as one of œdema, but rather as a subacute inflammatory condition of the mucous membrane.

There was a sufficient number of these cases, which had thin and superfical diphtheritic patches in various parts of the fauces, to warrant him in considering the disease of a diphtheroid character. This view was confirmed by the subsequent occurrence of glandular enlargement in nearly all the cases.

Dr. J. C. Mulhall, of St. Louis, Mo., confirmed the statements of Dr. Glasgow from his own experience with the disease in St. Louis, and reported a case in which the affection had recurred three times.

Dr. S. H. Chapman, of New Haven, Ct., had seen cases similar to those reported, but agreed with Dr. Daly that they were rather of a diphtheritic character. In one case the disease attacked a child aged seventeen months. In the same family was a boy, nine years of age, with well-marked diphtheria. The first thing noted in the case of the child was a dense swelling of the submaxillary gland. There was great prostration and some fever, temp. 100° to 102° F. The swelling increased until it extended from the jaw to the clavicles. There was hoarseness and difficulty of breathing, which daily increased. By the seventh day it had increased so much that deep incisions were made into the gland, but no pus was found. A tube was then inserted into the larynx and allowed to remain four days. The child during this time was kept alive by rectal alimentation. At the end of thirteen days the swelling began to diminish. The knife was again used and a quantity of pus discharged. The child recovered.

Dr. C. E. Sajous, of Philadelphia, Pa., referred to a case of this disease which occurred in a young man living on a farm in New Jersey, twenty miles from any neighbors, and who had not been exposed to diphtheria. The throat presented small, white patches, not resembling the yellowish, leathery membrane seen in diphtheria. Slight œdema of the soft palate was also present. The temperature was high throughout the entire course of the disease. There was incessant pain in the back and in one limb. After trying a number of remedies, he was placed upon benzoate of sodium.

Dr. W. C. Glasgow, of St. Louis, Mo., remarked that he had at first regarded these cases as diphtheritic. The membrane in them is adherent. It can be torn away, but a bleeding spot is left. Applications made it worse. If left to itself, it gradually grows thinner and thinner until it resembles a white, pearly patch. Diphtheritic membrane does not pursue such a course. The glandular enlargements always occur, even where there is no exudation. He did not think that anyone would assert that this œdema was diphtheria.

Dr. W. H. Daly, of Pittsburg, Pa., read a paper entitled

Some Discursive Remarks Based Upon a Few Observations of the Intimate Relations of Chronic Disease of the Upper Air-Tract and Neurasthenia.

His experience had led him to believe that there was an intimate relation in conditions of the intranasal cavities and neurasthenia in some of its forms. This view was based upon the study of twenty-five cases. In these cases removal of the nasal trouble was followed by relief of the neurasthenic condition, no special treatment being directed to the general condition.

Discussion.

Dr. J. O. Roe, of Rochester, N. Y., said that most of the members had seen many such cases, and they illustrate the effect that a constant local irritation will have upon the system. A constant nagging of a local irritant will sooner or later produce a depressed condition of the system.

Dr. F. W. Hinkel, of Buffalo, N. Y., remarked that before we could admit that neurasthenic condition could be the result of any nasal lesion as the sole cause, a careful analysis of all the constituent conditions would be required.

Dr. S. W. Langmaid, of Boston, Mass., thought that often the nasal trouble was the result of the neurasthenia. It often happens that operative interference fails to relieve the nasal condition because the neurasthenia is not cured.

Dr. C. E. Sajous, of Philadelphia, Pa., was inclined to support rather vigorously the view of Dr. Daly. In a number of cases he had observed that there were fluctuations in the nervous condition according as the local disease improved or became worse. In one case of neurasthenia associated with deviated septum, correction of the displacement was followed by improvement in the nervous condition. The operation, however, failed to be permanent, and with the return of the deviation the neurasthenic condition recurred, to again disappear with a more thorough operation upon the septum.

Presentation of Instruments.

Dr. Samuel Johnston, of Baltimore, Md., referred to the ease with which the mouth and nose could be washed out by means of an ordinary seltzer bottle filled with soda-water, a rubber tube being attached to the delivery pipe.

Dr. J. O. Roe, of Rochester, N. Y., exhibited œsophageal bougies, made of hard rubber, with a flexible tip of soft rubber. Also jewellers' saws in frames, suggested to overcome the objection of flexibility in the ordinary Bosworth saw. Also a powder-blower with reservoir.

Dr. E. Carroll Morgan exhibited an instrument to pull the return forward in applying the galvano-cautery to the pharyngeal tonsil.

Afternoon Session.

Dr. John N. Mackenzie, of Baltimore, Md., read a paper on

Some Points in the Pathology and Treatment of Diseases of the Nasal Pharynx.

The following conclusions were presented: 1. The nasal pharynx is, in quite a large proportion of individuals, extremely sensitive to reflex-producing stimulation. 2. The areas chiefly involved are the posterior portions of the turbinated erectile tissue, and various points along the upper and posterior portions of the nasal pharynx. 3. In consequence of this extreme sensitiveness, a local pathological process, which in many persons would give rise to no reflex neuro-vascular changes, may awake a host of neurotic phenomena referable not only to the region primarily involved, but also to other and even remote organs of the body. These may include cough, asthma, and various neuralgic affections; or the local structural lesion may be the starting-point of various sympathetic affections of the respiratory tract. 4. That these classes of naso-pharyngeal neuroses are explicable on the same general principle laid down in the article on "Neuroses of the Nose," and the pathology of the nasal and post-nasal affections is therefore one and the same. 5. That the treatment should be carried out according to the general directions laid down in the article just mentioned. 6. That when morbid processes originate in the pharyngeal tonsil, attention should not be directed to the bursa alone, but an endeavor should be made to extirpate the tonsil as far as possible in its entirety. 7. That while a favorable prognosis cannot be safely predicted by treatment of the bursa alone, extirpation of the pharyngeal tonsil often affords a most favorable prospect in long-standing cases of post-nasal trouble.

Dr. D. Bryson Delavan, of New York, read a paper entitled

Observations Upon the Condition Known as Adenoid Hypertrophy at the Vault of the Pharynx, and the Methods Used for Its Removal.

A case was described in which, with each acute attack of catarrhal trouble, there would be enlargement of the adenoid tissue of the vault of the pharynx, forming a large

tumor. When the attack passed away the hypertrophy disappeared.

The author then referred to the methods of operation and the accidents which might occur. As the operation was attended with considerable pain, he suggested the employment of anæsthesia. He had in a number of cases employed chloroform with satisfactory result, the object being to avoid the profuse mucoid secretion which is apt to follow the use of ether. Where chloroform is used, the operation is performed with the patient on his back.

DISCUSSION.

Dr. F. H. Hooper, of Boston, Mass., reported a case of a young lady who came to him with acute coryza, and in whom he found a large-sized adenoid of the vault. After the attack subsided the adenoid almost entirely disappeared. In order to avoid error the post-nasal probe should be always used. With it conditions not apparent to the eye may be recognized. He had never seen serious hemorrhage follow operations for the removal of this tissue. In operating he first removes all that is possible with the post-nasal forceps, and completes the removal with the finger-nail. He had never used chloroform. The amount of secretion after the use of chloroform varies very much in different cases.

Dr. Harrison Allen, of Philadelphia, Pa., advocated the use of the finger as a means of detecting these post-nasal affections. To examine the case thoroughly requires the use of an anæsthetic. In the treatment of adenoid hypertrophy it is better to remove all the diseased tissue at one sitting under ether than to remove it in portions at different times.

Dr. J. C. Mulhall, of St. Louis, Mo., held that for practical purposes the pathology of the pharyngeal tonsil was exactly the same as that of the faucial tonsil. In operating he had applied cocaine thoroughly to the pharyngeal wall and soft palate, to avoid the disagreeable sensation caused by the scraping of the forceps against the healthy pharyngeal wall, and had succeeded very well.

Dr. F. I. Knight, of Boston, Mass., related a case of acute hypertrophy of the faucial tonsil, in which the surgeon performed tracheotomy preparatory to removing the tumor. When he came to operate, he found that the growth had disappeared.

Dr. William E. Casselbury, of Chicago, Ill., referred to the importance of thoroughly eradicating these growths. In two cases in which portions of the mass had been left, the reflex symptoms, while greatly lessened, continued to recur. In two cases he had attempted to use the mirror during operation. To do this he pulled the soft palate forward by two rubber bands, passing through each nostril. In one case he succeeded to a certain extent, but in the other failed. This procedure, however, greatly facilitated the operation. In order to prevent the passage of blood into the larynx he was in the habit of bending the head forward at intervals so as to allow the escape of the blood.

Dr. J. N. Mackenzie, of Baltimore, Md., as a rule operates without anæsthesia, removing a portion of the mass every day or every other day, continuing the operation for a week or ten days. He had seen very little pain from the operation. There is one point in regard to the nature of this so called adenoid. He had examined a number of these growths under the microscope, and they do not differ from papillomatous growths. There is also in addition a true adenoid growth, this is more difficult of removal than the former.

Dr. F. H. Hooper, of Boston, Mass., read a paper

EXPERIMENTAL METHODS OF STUDYING THE ACTIONS OF THE INTRINSIC MUSCLES OF THE LARYNX.

The author exhibited the apparatus which he had employed in studying the effect of stimulation upon the internal thyro-arytenoid, the lateral crico-arytenoid, and posterior crico-arytenoid muscles. The larynx of a dog is quickly excised and the mucous membrane removed, and the muscles subjected to electrical stimulation.

Dr. F. I. Knight, of Boston, Mass., read a paper on

DYSPHONIA SPASTICA.

The speaker briefly reported the four cases of this affection which he had seen in the last seven years. He regarded the condition as rare. There is probably a spasmodic action of the muscles of phonation, or respiration, or both, giving rise to a high-pitched jerking voice. The prognosis is unfavorable. The object of the paper was to elicit reports of other cases.

DISCUSSION.

Dr. G. W. Major, of Montreal, Canada, had seen one case of aphonia spastica, and two cases of dysphonia spastica. In none of the cases was benefit obtained by treatment.

Dr. S. W. Langmaid, of Boston, Mass., had reported one case in which treatment was unsuccessful. The patient, when he had to use his voice, prescribed for himself a little whiskey, and this answered temporarily. There seems to be no change in the voice since the affection first came on, fifteen years ago.

Dr. D. Bryson Delavan, of New York, said that in one case coming under his observation, the patient was able to talk tolerably well after fortifying himself with a stimulant. This patient seemed to improve under local treatment to the larynx and vocal training, but the treatment could not be continued.

Dr. C. E. Bean, of St. Paul, Minn., had seen one case two years ago. Various methods of treatment had been employed without benefit. The voice is now the same as at the commencement.

Dr. Rufus P. Lincoln, of New York, read a paper on

RECURRENT LARYNGEAL GROWTH.

The patient had come under the care of the late Dr. Elsberg twenty four years ago. Dr. Elsberg first operated by the intro-laryngeal method, but could not remove the growth. Twenty-two years ago he did laryngotomy and removed the growth. The microscopical examination made at that time was unsatisfactory. There was no further trouble until a short time ago, when the growth recurred. Dr. Lincoln recently removed the tumor, which, upon microscopical examination, proved to be a papilloma.

Adjourned.

Friday, May 31st—Second Day—Morning Session.

Dr. T. Amory DeBlois, of Boston, read a paper describing

SOME OF THE MANIFESTATIONS OF SYPHILIS OF THE UPPER AIR-PASSAGES,

and exhibited drawings showing the conditions which he had found.

DISCUSSION.

Dr. F. H. Bosworth, of New York, referred to the necrosis of bone which occurs in syphilitic ulcerations. He did not believe that syphilitic ulcerations extended from one part to an adjacent part. Such ulceration is due to the breaking down of a gummatous deposit, and does not extend beyond the limits of the original gummatous deposit. The necrosis of the bone he held to be due to the interference with nutrition of the bone caused by the original deposit and that after the breaking down of the gummatous infiltration has taken place the ulceration is kept up by the necrosed bone, and treatment should, therefore, be directed to this point. He agreed with the reader of the paper, that potassium iodide was to be employed until the disappearance of the lesion, and that mercury should be used subsequently. Operative interference should be postponed until the syphilitic disease was well under control.

Dr. C. C. Rice, of New York, said that in these cases there was cicatrization and contraction above the visible adhesions, so that after the adhesions are freed, the results, as regards phonation and respiration, are not what would

be expected. This contraction in the post-nasal pharynx requires to be stretched in order to obtain good results.

In regard to operations: In one case where there were adhesions, and where there had been no syphilitic manifestation for many years, he separated the adhesions with the galvano-cautery. The ulceration which followed took on an unfavorable character, and continued to spread despite constitutional and local treatment.

Dr. J. N. Mackenzie, of Baltimore, protested against the too vigorous removal of diseased bone from the nasal passages. It frequently happens that more is pulled out than is desired, and sometimes from dangerous regions.

Dr. Wm. H. Daly, of Pittsburg, objected to the use of the galvano-cautery in tissues of the low vitality of syphilitic tissues. He believed that the galvano-cautery was a much abused useful instrument. He felt satisfied that better results could be obtained in the fauces, in the nose, in the larynx, in any operation, by using a sharp cutting instrument and allowing as free hemorrhage as is consistent with good judgment. The freer the hemorrhage within certain limits, the more certain is there to be immunity from septicæmia, and rapid union.

Dr. Chas. H. Knight, of Boston, read a paper entitled

NOTE ON THE GALVANO-CAUTERY IN THE TREATMENT OF HYPERTROPHIED TONSILS.

This paper was supplementary to one read two years ago. The galvano-cautery cannot be satisfactorily used in young children, and in them the guillotine is preferable. In older children and adults the galvano-caustic point will prove of service. The galvano-loop was especially considered. With this the operation can be done at one sitting. The portion removed by the loop does not indicate the real extent of the operation. A portion of the remaining tissue sloughs, so that the operation with the loop is better than with cutting instruments. There seems to be very little more pain with the galvano-loop than with the guillotine. The former operation is, however, more disagreeable, on account of the odor of burning flesh.

DISCUSSION.

Dr. T. A. DeBlois, of Boston, had used the electrolytic needle with good effect. Under cocaine, the pain of the procedure is very slight. Half a dozen punctures each day will in a short time produce great diminution. This method is used only in adults. In children the tonsils are very apt to diminish in size without treatment.

Dr. C. E. Sajous, of Philadelphia, had frequently used the galvano-point, but had to make as many as eighteen or twenty punctures in order to obtain satisfactory results. After the second visit the patient expresses very little objection to the operation. The galvano-point is useful in the treatment of enlarged tonsils, especially where the density is not great. Here the cicatricial contraction assists in reducing the size.

Dr. William H. Daly, of Pittsburg, believed that in the normal throat, no portion of the tonsil extended beyond the line of the half-arches, and in abscission of the tonsil our object should be to restore the throat as nearly as possible to its normal condition. This cannot be thoroughly done with the tonsillotome, but the operation must be completed with forceps and bistoury.

Dr. F. H. Bosworth, of New York, could see no reason for treating this condition by means of eighteen or twenty punctures, when the whole trouble could be removed in a few seconds by a very simple operation.

Dr. C. C. Rice, of New York, believed that there are a few cases in adults, where there has been frequent attacks of tonsillitis and the tonsils are greatly congested, where the galvano-cautery is of service.

Dr. John O. Roe, of Rochester, read a paper entitled

THE TREATMENT OF DISEASED TONSILS WHEN UNATTENDED WITH HYPERTROPHY.

The conditions referred to are of marked clinical importance, but their consideration is ignored by writers upon these subjects. The most common form of disease of the tonsil is hypertrophy, and in children it is rare to find any other form. During adolescence the tonsils may diminish in size, but they do not return to their normal condition. The small tonsils in adults have often followed hypertrophy. This is a point in favor of the removal of enlarged tonsils. The two forms of disease of the tonsil to which attention was called were, first, chronic disease of the crypts and lacunæ, and, second, fibroid degeneration of the stroma of the organ, the cicatricial form of the disease. The first is the result of chronic follicular catarrh of the tonsil, and is usually associated with chronic follicular catarrh of the pharynx. The treatment of these conditions is important, not only on account of the disease itself, but also because they are the source of recurrent trouble, and may cause reflex symptoms. Local applications are practically useless. The galvano-cautery, which is useful in the treatment of hypertrophied tonsil, may be employed here, but is not as efficient as it is in the former condition. The treatment par excellence is ablation with the knife. The diseased crypts may be laid open and cauterized with chromic acid or fused nitrate of silver. Excision is, however, the best plan. It is rarely advisable to attempt removal of the whole mass at one time, on account of the adhesions to the pillars. The use of cocaine lessens pain and hemorrhage. In every instance in which the speaker had employed excision, the cure had been perfect, with entire relief from the attendant symptoms.

DISCUSSION.

Dr. H. L. Swain, of New Haven, reported a case in which recurrent attacks of swelling of the lingual tonsil were caused by the presence of hard masses in the faucial tonsil. The attacks were subdued by treatment of the crypts, by cutting into them with the galvano-cautery and thoroughly cauterizing their interior.

Dr. J. Solis-Cohen, of Philadelphia, had seen many cases of spasmodic cough due to nothing but the presence of these masses in the crypts and lacunæ of the tonsil. These had been found not only in enlarged, but also in apparently contracted tonsils. It is sometimes necessary to produce some gagging so that the posterior portion of the tonsil presents, in order to discover this condition. In enlarged tonsil the best treatment is probably excision, but in these atrophied tonsils he had pressed the matter out with a blunt scoop, and then applied a simple astringent consisting of creasote, gr. j., iodine, gr. j., potassii iodide, gr. v., and glycerine, ℥ j. If this does not answer, he cuts the crypts, open with scissors and scrapes them as thoroughly as possible. This affection is not as thoroughly appreciated by the profession as it should be. He had seen cases where cough, existing for five to ten or more years, had been permanently relieved by treating this condition.

Dr. William H. Daly, of Pittsburg, referred to cases in which the patients were really sick as the result of these lacunæ becoming filled with cheesy matter.

Dr. F. I. Knight, of Boston, described a case of long-continued irritative cough, in which the removal of a cretaceous mass, as large as a pea, from a crypt of the tonsil, was followed by complete cure.

Dr. Sand Johnston, of Baltimore, referred to three cases in which the collection, instead of consisting of soft cheesy material, was hard, looking like spicules of bone, and adhered with great intensity. These bodies were not limited to the tonsil, but were also found on the lower part of the fauces and on the post-pharyngeal wall.

Dr. Harrison Allen, of Philadelphia, stated that he had referred to this condition in a paper published in 1882. The solid matter is retained in the crypts. This pressure is often produced by the anterior fold. Sometimes the secretion has gotten out of the tonsil, but is still retained behind the fold. More frequently these masses are beneath the tonsil, under an adventitious membrane.

Dr. J. Solis-Cohen, of Philadelphia, read a paper entitled

A CASE OF SARCOMA OF THE THYROID GLAND.

The case was one of sarcoma of the thyroid gland, with pressure on the right sympathetic nerve; unilateral tonic spasm of the laryngeal muscles; intermittent clonic spasm of the muscles of the opposite side. There was stenosis from the pressure of the tumor. For this tracheotomy was performed. This afforded relief for a number of months. Hemorrhage occurred twenty months later, but was controlled without much difficulty. Gradually marked disturbance of the two pneumogastrics supervened, and there was great interference with respiration. It was accidentally discovered that any irritation of the mucous membrane of the trachea would relieve the dyspnœa, and at once the lividity of the face would disappear. This effect was readily produced by touching the posterior wall of the trachea with a bent wire passed through the tracheotomy tube. The patient died of exhaustion.

Adjourned.

At the invitation of the President the afternoon was devoted to an excursion to Mount Vernon.

Saturday, June 1st—Third Day—Morning Session.

Dr. C. C. Rice, of New York, read a paper entitled

SOME UNUSUAL MANIFESTATIONS OF TUBERCULOSIS OF THE LARYNX.

The first unusual manifestation referred to was where syphilis and tuberculosis of the larynx coexist. Here the lesions of one process mask those of the other. Here the prognosis depends upon which is the more active condition; this combination is more common than is generally supposed, and probably some cases of cure of supposed tuberculosis should be placed under this head. A second unusual manifestation is the engrafting on the tuberculous process of a new tissue, rendering the diagnosis difficult. This new tissue may be of two forms, either a granulation tissue or a papillomatous growth. The third condition was adhesive inflammation at the anterior ends of the vocal bands. This must be rare, as the tubercular process shows little tendency to cicatrization and healing. It is liable to occur only when the cords are immovable and there is general proliferation of tissue. The last condition referred to was one in which the tubercular deposit in one arytenoid was the only manifestation of the disease in the larynx, the remaining parts of the larynx being perfectly normal.

DISCUSSION.

Dr. W. H. Daly, of Pittsburg, was satisfied, from his experience in three or four cases, that in some instances tubercular ulceration of the larynx may be cured. In these cases there was no evidence of syphilitic disease, and in at least some of them the tubercle bacilli were found. Recovery has followed the use of alkaline sprays and inhalations, with the free use of iodoform. He believed that tuberculous ulceration of the larynx might occur without evidences of tubercular deposit elsewhere.

Dr. J. C. Mulhall, of St. Louis, thought that there might be a catarrhal ulceration of the larynx, and that this was a curable condition. He did not think that it would be easy to prove that tubercular disease of the larynx was ever primary, although it is sometimes the first sign of the condition. In tubercular ulceration of the larynx he had used pure lactic acid and had seen the ulceration heal, but he could not say that he had ever seen life prolonged to any appreciable extent.

Dr. F. I. Knight, of Boston, had not the slightest doubt that tubercular ulceration of the larynx does get well. He had seen such ulcers heal under alkaline sprays and iodoform, and more especially under lactic acid. He thought that it was possible to have the tubercular disease of the larynx as a primary affection, but in the majority of cases careful examination will reveal evidences of disease of the lung. He did not regard changes in the respiratory murmur and in respiration as the most important signs of early phthisis. He placed more reliance upon the localized râles which are heard on coughing. In order to develop this sign the patient should not inspire immediately before or after the cough, but should cough from a rest. He had seen but a few cases in which he regarded the disease as primary in the larynx.

Dr. M. E. Casselbery, of Chicago, reported a case in which he found catarrhal ulcerations of the larynx. These readily healed under cleansing treatment, and there had been no return of the ulceration during a period of two years.

Dr. J. N. Mackenzie, of Baltimore, thought that the question of the possibility of the existence of primary tubercular disease of the larynx had been settled by examinations, upon the post-mortem table, where, in a few cases, careful examination of the body revealed tubercular deposit nowhere but in the larynx. While a tubercular ulceration of the larynx may heal, this by no means indicates the cure of the disease. I have seen the coexistence of syphilis and tuberculosis in the larynx several times, and it is difficult to say which is the syphilitic and which the tubercular ulceration. The only test is that of treatment. He had never seen what could be called catarrhal ulceration of the larynx. In regard to treatment, he thought that more harm than good was produced by the employment of harsh measures. There is a form of ulceration which occurs in the later stages of phthisis, principally near the bifurcation of the trachea, which is probably due to the corrosive action of the sputa.

Dr. W. C. Glasgow, of St. Louis, believed that tubercular ulcers of the larynx were never healed. He had seen cases of ulceration of the larynx heal under treatment, but he did not consider these to be true tubercular ulcerations. These have healed under simple treatment. He had used with great satisfaction, during the past two years, the peroxide of hydrogen in the treatment of such ulcerations, and under its use there is rapid healing. He did not believe in primary tubercular disease of the larynx. In all the cases that he had seen, there had been more or less disease of the lungs. In true miliary tuberculosis of the larynx, he had always found some evidence of disease in the lung, and these cases he thought never recovered. He had seen cases of catarrhal ulceration of the larynx.

Dr. S. Solis-Cohen, of Philadelphia, read a paper entitled

THE OCCASIONAL TOPICAL USE OF SOLUTIONS OF NITRATE OF SILVER IN THE TREATMENT OF CHRONIC LARYNGITIS.

The cases reported were not due to nasal disease or obstruction; nor were they those in which all topical treatment is unnecessary. Where indigestion, constitutional disease, or diathesis have been present, these have received due attention. It was simply of topical applications for the relief of local conditions that he spoke. All have encountered cases of chronic laryngitis, especially in singers, clergymen, lawyers, etc., in which, after all discoverable sources of irritation, local or general, have been removed, and approved topical treatment suited to the individual case has been faithfully tried, for a longer or shorter time, improvement takes place to a certain point and then stops. Perhaps all visible evidences of disease, except an irregular, pinkish striping of the vocal bands have disappeared, or perhaps there would be a faint uniform coloration, or may be only a loss of lustre, but something there would be that persisted, and that prevented the patient from resuming with comfort full use of the voice in singing or speaking, or perhaps even in ordinary conversation.

It is in such conditions as these, the last obstinate remnants of the disease, that he had derived considerable satisfaction from the topical use, by sponge, cotton-wad, or brush, of weak solutions of silver nitrate, about ten grains to the ounce, applications being made every day,

for two or three days, until some congestive reaction is produced; after that at longer intervals. In the course of treatment, too, in some cases before reaching the last stage above described, I have found recovery apparently hastened by occasionally substituting stronger solutions of silver nitrate, forty to sixty grains to the ounce, for the iodized glycerine, tannin, tar, or other routine application. A visible increase in congestion immediately follows the use of the silver solution, but this passes off quickly, and at the next visit great improvement is usually manifested. These applications are made once in about two or three weeks, according to circumstances.

Dr. C. E. Bean, of St. Paul, read a paper entitled

TUBERCULOSIS OF THE TONGUE.

The author described two cases of tuberculosis of the tongue, one in a male and the other in a female. In both the disease had made extensive progress when they came under observation, and no operative measures seemed warrantable. In both there was well-marked involvement of the lungs. Death occurred in both cases a short time later. Attention was called to the differential diagnosis between tuberculosis, carcinoma, and syphilis. Carcinoma is to be excluded by the absence of glandular enlargement, and of the lancinating pains peculiar to that disease. The question of syphilis can only be determined by the history and by the effect of antisyphilitic remedies.

Dr. J. C. Mulhall, of St. Louis, read a paper entitled

THE LOCAL TREATMENT OF DIPHTHERIA.

The method of treatment which he suggested was based upon the following considerations: 1. That diphtheria is a germ disease. 2. That the specific microbe, in the majority of cases, selects the tonsils. 3. That, unless checked by treatment, the colonization of these germs results in local putrefactive changes with subsequent involvement of the general system. 4. That implication of the larynx, or of the nasal passages, increases the mortality. 5. That the disease is acutely adynamic. It had occurred to him that in this disease it would be better to wash out the throat than to spray it. This is accomplished by means of an ordinary syringe, and in this way the throat can be washed out without difficulty. The patient should be kept in the recumbent position, the head being brought to the edge of the bed. This procedure is repeated every hour during the day, and at no time is a longer period than three hours allowed to elapse. The only solution that he has used has been carbolic acid with compound solution of iodine. The water is frequently saturated with boracic acid.

The post-nasal space requires careful attention. In every case of diphtheria the nasal cavities should be kept sterile from the first. Where it is certain that the nasal cavities are not affected, the insufflation of a non-irritating, antiseptic powder may be sufficient. Where there is uncertainty, or where it is certain that infection has taken place, the nasal cavities are to be washed out with a weaker solution of the same kind—not more than a teaspoonful for each nostril. For this purpose he recommended a small glass syringe with a bulbous extremity, to prevent injury to the nose. After cleansing he frequently resorts to solvents, and has obtained the best results with papoid. In laryngeal diphtheria, inhalation is the only practicable method. The inhalation of the vapor from slacking lime should not be forgotten. In several cases of laryngeal diphtheria he had obtained good results by placing the patient in a small room which had been fumigated with sulphur, and by keeping water, to which has been added pine-tar and turpentine, constantly at the boiling point.

DISCUSSION.

Dr. W. C. Glasgow, of St. Louis, believed that diphtheria is a blood disease rather than a local affection, and that the only objects in local treatment are cleanliness, disinfection, and loosening of the membrane. One remedy which he had used with advantage was the peroxide of hydrogen by spray. It seems to act by lifting up the membrane by the formation of gas. He considered the constitutional treatment as the most important, and he thought the bichloride of mercury and benzoate of soda were the most successful remedies. With these he uses very simple local treatment. In the cases of severe local manifestations the method described by Dr. Mulhall would be valuable.

Dr. D. Bryson Delavan, of New York, referred to the value of the bichloride and cyanide of mercury, which he had used for ten years in the treatment of diphtheria.

Dr. W. H. Daily, of Pittsburg, had on previous occasions recommended the use of calomel in the treatment of this affection, and he thought that it was as efficient as a local agent as it was active as a constitutional remedy. He believed that calomel in large and frequently repeated doses—two, three, four, or five grains to children one and a half to two years of age—exerted a valuable therapeutic effect. He thought that a large part of the effect was from the local action upon the diphtheritic poison.

Dr. Harrison Allen, of Philadelphia, referred to the value of trypsin as a solvent for the diphtheritic membrane.

Dr. F. Whitehill Hinkel, of Buffalo, read a paper entitled

SOME MANIFESTATIONS OF LITHÆMIA IN THE UPPER AIR-PASSAGES.

The influence of lithæmia and allied conditions upon the upper air-passages has received little attention in laryngology, as is shown by the scanty literature extant upon the subject. There is a distinction to be made between distinctly gouty sore throat and that due to lithæmia or some allied condition. The subjects of the latter may never have attacks of true gout, nor irregular manifestations of it—indeed, as a rule, they are not so affected. The term lithæmia is elastic in its application to cases, varying from extreme digestive and nervous disturbances to almost normal health; consequently its manifestations in the upper air-passages are not sharply distinguished, nor are they typical or pathognomonic. One of the most characteristic manifestations is a patchy or streaked irregular congestion of the mucous membrane of the larynx and pharynx. In the former case a dry, explosive cough accompanies; in the latter, uneasiness or positive pain is referred to the sides of the throat, occasionally extending to the ears. These cases are notably irritated and made worse by stimulant applications. Local sedatives and general antilithic treatment give the best results. Occasionally, acute naso-pharyngeal catarrh is a manifestation of an exacerbation of the lithæmic tendency. Alkaline and diluent medication, with proper diet, give more relief than local treatment. Obstinate relaxation of the nervous plexuses of the turbinated bodies in some individuals appears associated with lithiasis. Such cases stand operative—caustic—applications badly, and receive little or no benefit from them. Some of these cases are much improved by antilithics and general hygiene. Others are intractable on account of uncontrollable lithæmic tendencies.

OFFICERS FOR ENSUING YEAR.

President—Dr. J. M. Mackenzie, Baltimore; *1st Vice-President*—Dr. Edgar Holden, Newark; *2d Vice-President*—Dr. C. E. Bean, St. Paul; *Secretary and Treasurer*—Dr. C. H. Knight, New York (No. 20 West Thirty-first street); *Librarian*—Dr. T. R. French, Brooklyn; *Council*—Drs. Franklin H. Hooper, Boston; George M. Lefferts, New York; Frederick I. Knight, Boston; D. Bryson Delavan, New York; *Representative on the Committee of the Congress of American Physicians and Surgeons*—Dr. Harrison Allen, of Philadelphia.

The following were elected to membership: Drs. William E. Casselbery, Chicago; H. L. Swain, New Haven.

The Association then adjourned to meet in Baltimore, the time of meeting to be determined by the Council.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

LEPROSY AND ITS PREVALENCE—MODERN PROVISIONS FOR THE CARE OF LEPERS—CLOSING MEETINGS OF THE MEDICAL SOCIETIES—MR. HUTCHINSON ON THE CLINICAL USES OF RARE DISEASES—ENLARGEMENT OF THE THYROID GLAND IN SIX MEMBERS OF ONE FAMILY—THE NEW BY-LAWS OF THE COLLEGE OF SURGEONS AND THE COMING ELECTION TO THE COUNCIL.

LONDON, May 12, 1889.

THE subject of leprosy is one of which the interest is on the increase both among the profession and the public. In spite of the attention which has been devoted to the subject, there is as yet no general consensus of opinion in the profession, or rather, among those members of it who are qualified to express an opinion on the matter, as to the contagiousness and the inoculability of the disease. The Leprosy Committee of the College of Physicians, in their recent report to the College, urged that a full and careful scientific investigation should be made by the Government. The extent to which the disease is prevalent was shown in a striking manner at the last meeting of the Epidemiological Society, when Dr. P. S. Abraham read a paper on "Leprosy," and exhibited a map of the world in which those regions where leprosy is more or less prevalent were colored dark. Dr. Abraham's paper literally bristled with statistics, and can therefore hardly be briefly summarized in a very few lines; but the facts and figures he brought forward would tend to show that the disease is becoming more common, and that it is more frequently met with in countries in which hitherto leprosy has not been endemic. The various leper hospitals and asylums in different parts of the world were referred to. It was encouraging to learn that in Norway the milder forms of the disease are regarded as being, to some extent, amenable to treatment. A number of microscopic specimens were shown, illustrating the morbid changes found in the skin, nerves, liver, and other organs; the bacilli of leprosy (from the saliva of a leper) were also exhibited. Two leprous patients were also on view—one of each variety of the disease, viz., tubercular and anæsthetic leprosy respectively. Dr. Abraham objected to the former term as inaccurate, for the disease had no affinities with tuberculosis, nor could the growth in the skin be described as physical tubercles; "nodular" would be a better term. Dr. Pringle made an energetic speech, in which he referred to the increase of the disease in India. Formerly, he said, it was very common for lepers to be put to death, either by drowning, burying them alive, or in other ways. This had now been forbidden by the Government, on whom it was therefore incumbent to provide proper means of caring for and segregating lepers. The sexes should be kept apart in leper asylums. It had been said that this could not be done, but it was carried out in some asylums and an instance was mentioned. Dr. Pringle incidentally remarked that leper settlements had their origin in the association of lepers together for mutual protection. The further discussion of the paper was deferred to the next meeting of the Society.

As the winter wanes, so does the interest in the meetings of the various societies. Most of them will shortly cease to meet for the present season. During the last week two have held their final meeting, viz., the Medical Society of London and the Harveian Society. At the former, the annual conversazione marked the close of their labors for the present season. In the course of the evening an address was given by Mr. Jonathan Hutchinson on "The Clinical Uses of Rare Diseases." He said that the diseases which presented the most apparent peculiarity were often, if correctly understood, definite examples of evolution under ordinary laws. Many rare diseases were simply exaggerated or overgrown examples of common ones. Thus, for one case of Grave's disease which was so severe as to justify the diagnosis, there were probably twenty in which the condition threatened but never became complete. If it were true that many of the diseases accounted rare were simply exaggerated specimens of what was common, it was true of others that they revealed individual idiosyncrasies of exaggerated intensity. Xeroderma pigmentosum (Kaposi's disease) was a noteworthy instance of this; all examples of unusual freckling—perhaps all freckling whatever—denoted a minor form of Kaposi's disease. We might also learn something as to anatomical and physiological laws from the careful observation of rare cases. Thus he had met with three male patients in whom, while the urethral and anal sphincters were paralyzed, the power of copulation remained undiminished; a demonstration was thus supplied of what was agreed on by physiologists, viz., that the spinal centre for copulation was higher than, and distinct from, that which supplied muscular force to the sphincters and regulated micturition and defecation. The condition known as "dry mouth," since it was unattended by any other symptom, supplied a proof that there was a centre which controlled the function at once of the salivary glands and of all the mucous crypts and smaller gland organs which were found in the mucous membrane of the cheeks, palate, gums, and tongue. It was not unimportant to assert that there were absolutely no cases which were unique. However strange and bizarre the phenomena in any individual case, we had but to wait long enough to find their exact parallel.

The concluding meeting of the Harveian Society was a "Clinical Evening," being devoted to the exhibition of living patients and the discussion of their cases. A very interesting family group was shown by Mr. Jacobson, assistant-surgeon to Guy's Hospital. This consisted of a mother, aged thirty-seven, and five children, whose ages ranged from one to twelve. In all, the thyroid gland was enlarged. In the mother the enlargement had been so excessive as to cause serious interference with breathing and necessitate an operation. Thyroidectomy had been recently performed, and almost the whole of the gland removed; the patient was still wearing a drainage-tube. In the children the enlargement of the gland was less extreme, but, in view of its probable increase, the opinion of the Society was asked as to what measures would be desirable. Among the remedies (other than operative interference) suggested by those who discussed the case were the injection of acetic acid, inunctions of an ointment of the red iodide of mercury, and repeated blistering (small blisters the size of sixpence or a shilling).

The Home Secretary has approved, with certain modifications, of the new by-laws of the College of Surgeons, and it is therefore hoped that it will be possible to inaugurate voting by means of voting papers at the coming (July) election to the Council.

WHITE SPOTS IN THE RETINA.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: I read with interest the two cases described by Dr. Valk in a recent number of THE RECORD, but do not think they are parallel ones to mine. The white dots in my case were beyond doubt in the retina, as shown by a close examination in the upright image, convex lenses of different strength being used to adjust the eye to the varying distance of the detached retina from the observer.

I find that Schweigger also mentions the occurrence of these spots in the detached retina as a rare condition, which he is inclined to ascribe to the presence of cholesterine.

Yours respectfully,

F. E. D'OENCH, M.D.

NEW YORK, May 25, 1889.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 2 to June 8, 1889.

MERRILL, JAMES C., Captain and Assistant Surgeon. By direction of the Acting Secretary of War, is detailed as a member of the Board of Medical Officers appointed by Par. 9, S. O. 108, May 10, 1889, from this office, to meet at the United States Military Academy, West Point, N. Y., on June 1, 1889, or as soon thereafter as necessary, to examine candidates for admission to the Academy, etc., vice Captain Frederick C. Ainsworth, Assistant Surgeon, hereby relieved as a member of the Board. Par. 4, S. O. 127, A. G. O., June 3, 1889.

OWEN, W. O., Jr., Captain and Assistant Surgeon. The leave of absence for seven days, granted in Orders No. 18, c. s., Fort Gibson, I. T., is extended twenty-three days. Par. 2, S. O. 67, Headquarters Department of the Missouri, Fort Leavenworth, Kan., May 29, 1889.

KEAN, JEFFERSON R., First Lieutenant and Assistant Surgeon. By direction of the Secretary of War the leave of absence granted in S. O. No. 48, May 13, 1889, Department of the Platte, is extended fifteen days. Par. 3, S. O. 129, A. G. O., June 5, 1889.

WALES, PHILIP G., appointed Assistant Surgeon with rank of First Lieutenant, from June 7, 1889.

DEWITT, THEODORE F., appointed Assistant Surgeon with rank of First Lieutenant, from June 7, 1889.

TEN EYCK, BENJAMIN L., appointed Assistant Surgeon with rank of First Lieutenant, from June 7, 1889.

Official List of Changes in the Medical Corps of the United States Navy for the week ending June 8, 1889.

PAGE, J. J. (retired), Assistant Surgeon. Granted one year's leave of absence, to leave the United States.

BAILEY, THOMAS B., appointed an Assistant Surgeon in the Navy, May 23, 1889.

BARBER, GEORGE H., appointed an Assistant Surgeon in the Navy, May 23, 1889.

ROTHGANGER, GEORGE, appointed an Assistant Surgeon in the Navy, May 24, 1889.

SMITH, GEORGE TUCKER, appointed an Assistant Surgeon in the Navy, June 3, 1889.

BAILEY, T. B., Assistant Surgeon. Ordered to the Receiving-ship Dale, at Washington, D. C.

BARBER, GEORGE H., Assistant Surgeon. Ordered to the Receiving-ship Vermont, at New York.

OGDEN, F. N., Assistant Surgeon. Ordered to examination preliminary to promotion.

BRYANT, P. H., Assistant Surgeon. Detached from Naval Hospital, Chelsea, and granted a month's leave of absence.

MAYO, H. O. (retired), Medical Director. Granted one year's leave of absence, with permission to leave the United States.

ELECTROLYSIS IN STRICTURE.—Dr. Fort read a paper at a meeting of the Academy of Medicine in Paris, on April 14th, on the treatment of urethral stricture by electrolysis, in which he stated that he had obtained very good results from this method, two cases treated by him in public a year ago being now well, and with no signs of a recontraction. The operation, he maintains, should be preferred to divulsion, dilatation, or cutting, even if it were always followed by a return of the stricture, since it is painless and devoid of danger.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending June 8, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	12	4
Scarlet fever	159	26
Cerebro-spinal meningitis	2	4
Measles	110	10
Diphtheria	147	41
Small-pox	0	0
Yellow fever	0	0
Cholera	0	0

BILLROTH'S ILL-HEALTH.—The visitor who has seen photographs of the celebrated surgeon in charge of this clinic, experiences rather a shock when Billroth himself appears. Instead of a man in full vigor, robust, and of iron constitution, as his pictures represent, he is quite the reverse. I am told that his dangerous illness of last year has wrought the change. His frame is large and muscular; the head partially bald and carried well forward, giving a decided stoop to his shoulders; the hair gray, and the full beard almost white as snow. He walks as though he had not yet recovered his strength. His speech is somewhat hesitating, and in so low a tone as to be heard only in the front rows of the amphitheatre. But it is his method which we most admire. There is still great steadiness of hand—every detail, it is easy to see, is within his control; so that with declining health and strength his mental faculties are not impaired. He is surrounded by a dozen bright and energetic assistants, to whom, as well as to most of the Vienna students, Billroth is a demigod. There is a somewhat Hebraic countenance, with a look of benevolence, compassion, and deep thought intermingled. —Vienna correspondence, *Occidental Medical Times.*

THE PROMOTION OF ILLEGITIMACY IN VIENNA.—In connection with the obstetrical department of the hospital, and in the hope that the system would prevent induced abortions among the lower classes, the following plan was adopted some years ago: Any woman can enter the hospital, masked or not, as she desires; be known only by a number; live according to one of three grades—the cheapest costing about thirty cents a day; be attended in labor by skilful accoucheurs, and leave the hospital when she desires, with or without the child. If without the child, it is given a number, by which the mother can reclaim it even after years. When not reclaimed, the child, if a boy, is brought up as a soldier; if a girl, as a nurse. The only condition required of the mother is the payment of the small living fee (thirty cents a day), and enclosing her name and address of friends in an envelope to the secretary of the hospital, which is only opened in the event of her death while in the hospital. If all goes well, on her departure from the hospital it is returned to her unopened. This plan has indeed decreased the abortions and increased the population of Vienna, but it has also removed another check on free intercourse—the fear of becoming pregnant.

CAPTAIN COOK'S RHEUMATISM CURED BY MASSAGE.—Dr. J. Werthner, of Lincolnville, Kan., writes: "Having been under the impression that massage was a comparatively recent and novel method of therapeutics, I was astonished and much interested while reading an account of Captain Cook's third voyage around the world, in 1777, to see the following: 'While stopping at Otaheite, one of the Society Islands, Captain Cook was freed from a rheumatic complaint, that consisted of a pain extending from the hip to the foot. Otoo's (the chief's) mother, his three sisters

and eight other women went on board for the express purpose of undertaking the cure of his disorder. He accepted their friendly offer, had a bed spread for them on the cabin floor, and submitted himself to their direction. Being desired to lay himself down amongst them, then as many of them as could get round him began to squeeze him with both hands, from head to foot, but more particularly in the part where the pain was lodged, till they made his bones crack, and his flesh become a perfect mummy (!). After undergoing this *discipline* about a quarter of an hour, he was glad to be released from the women. The operation, however, gave him immediate relief; so that he was encouraged to submit to another rubbing down before he went to bed; the consequence of which was, that he was tolerably easy all the succeeding night. His female physicians repeated their prescription the next morning, and again in the evening; after which his pains were entirely removed and the cure perfected. This operation, which is called *romee*, is universally practised among the islanders; being sometimes performed by the men, but more generally by the women' ('Narrative of the Voyages round the World by Captain Cook,' by A. Kippis, D.D., F.R.S., etc.). The above is probably not unknown to some of the medical profession, but to many it will likely be new."

Beer Compared with Other Alcoholics.—For some years a decided inclination has been apparent all over the country to give up the use of whiskey and other strong alcohols, using as a substitute beer and other compounds. This is evidently founded on the idea that beer is not harmful, and contains a large amount of nutriment; also, that bitters may have some medical quality which will neutralize the alcohol which it conceals, etc. These theories are without confirmation in the observation of physicians. The use of beer is found to produce a species of degeneration of all the organs, profound and deceptive fatty deposits, diminished circulation, conditions of congestion, and perversion of functional activities; local inflammations of both liver and kidneys are constantly present. Intellectually a stupor amounting almost to paralysis arrests the reason, changing all the higher faculties into a mere animalism, sensual, selfish, sluggish, varied only with paroxysms of anger that are senseless and brutal. In appearance the beer-drinker may be the picture of health, but in reality he is most incapable of resisting disease. A slight injury, a severe cold, or a shock to the body or mind, will commonly provoke acute disease, ending fatally. Compared with inebriates who use different kinds of alcohol, he is more incurable and more generally diseased. The constant use of beer every day gives the system no recuperation, but steadily lowers the vital forces. It is our observation that beer-drinking in this country produces the very lowest kind of inebriety, closely allied to criminal insanity. The most dangerous class of ruffians in our large cities are beer-drinkers. Recourse to beer as a substitute for other forms of alcohol merely increases the danger and fatality.—*Scientific American.*

Slight Aortic Insufficiency.—Experiments were published recently by Dr. Timofejew, in which he showed that a very slight aortic insufficiency may exist without producing a diastolic murmur, but that here a distinct accentuation of the second sound can then be heard; he also found that with greater but still slight insufficiency, though a murmur is produced, this can be made to cease by diminution of the blood-pressure, either by venesection or by section of the spinal cord. These experimental observations are in full accord with the well-known clinical fact that an aortic bruit is sometimes temporarily much less pronounced than usual, and may even occasionally disappear. An interesting paper has just been published by Professor Carl Dehio, of Dorpat (*St. Petersburg Med. Woch.*, No. 50, 1888), in which he gives the details of a case which illustrates this variability of some aortic bruits very well. The patient was a student who had suffered from syphilis. At times he experienced severe pain in the region of the heart, accompanied by dyspnœa, headache, giddiness, and faintness. He had consulted several physicians, some of whom had detected a murmur, while others had declared there was none. Professor Dehio found at first, while the patient was sitting, merely some accentuation of the second sound, but as soon as he stood up a blowing murmur was audible over the whole of the body of the sternum synchronous with the second sound, and prolonged to the end of the diastole. After a time this became less and less perceptible, and finally vanished, but on the patient moving or working his arms about it reappeared. Tracings taken with a Dudgeon's sphygmograph showed that while the patient was in a recumbent posture, there being no murmur, the pulse, which was beating 80 per minute, was of a normal but weak character, with a slight distention-wave and a low blood-pressure, the secondary waves being only just perceptible. On standing up, the beats increased to 88 per minute, the bruit becoming then audible, the tracing assumed the character frequently observed in cases of neurotic cardiac palpitation, the pulse-wave being higher, but falling rapidly, and the secondary and tertiary waves being well marked. After considerable exertion, when the bruit was louder still, the beats being, however, only 76 per minute, the distention-wave was three times as high as when the patient was lying down, and it fell very quickly, being in fact the typical *pulsus celer*. It is seen that the bruit was dependent on the initial blood-pressure due to the force of the contraction of the left ventricle, rather than on the mean intra-arterial pressure, which was probably not increased, since, according to the researches of Riegel and of Wetzel, there is no increase in the mean pressure where the secondary waves become more pronounced. It is evident from the tracings that whenever the primary wave increased, the secondary waves increased also, and thus that while when the patient was in a recumbent posture there was but a gentle backward stream through the defective valves, yet upon a slight amount of exertion the velocity of this stream was greatly increased, and thus became capable of producing a murmur. This difference between a gentle and a rapid stream can be easily illustrated by compressing an india-rubber tube through which water from a cistern is flowing, when the murmur, which can both be heard and felt, is readily found to depend on the velocity of the water. Dr. Dehio remarks that he cannot well have mistaken a murmur of hæmic origin for a slight aortic insufficiency in this case, for the whole history, the dilatation of the heart, the occasional whistling character of the murmur, and the serious subjective sensations of pain and palpitation all point to organic mischief. Again, the insufficiency must, he thinks, be of slight extent, as the dilatation of the left ventricle was but very moderate, and as Duroziez's double bruit was not audible in the femoral arteries.—*The Lancet.*

Medical Reform in Turkey.—Dr. Morris J. Franklin (New York Medical University, 1858), medical missionary, writes from Safed, Syria, Turkey, under date of April 11, 1889, that he has just received an *Emir* or order from the Imperial Academy of Medicine of Constantinople that all medical practitioners must prove their qualifications and present their diplomas for registration at Constantinople, and that this edict is to be strictly enforced throughout the Empire. Dr. Franklin, who has been appointed Doctor of his municipality, and is vested with the powers of a censor, further says that, owing to the laxity of enforcement of this law (which was passed as a law twenty-eight years ago), the country has been overrun with charlatans from every quarter of the globe.

The Kidneys in Diabetes.—Fichtner points out that among the lesions observed in the kidneys of subjects of diabetes, glycogenic degeneration or infiltration of the epithelia of Henle's tubes is one of the most constant, but yet difficult of explanation (*The Lancet*). Changes in the cortex have been less frequently met with; some have

seen acute interstitial inflammation, leading even to granular kidney; others describe epithelial necrosis, especially in cases of diabetic coma, attributable to the action of acetone and diacetic acid. Fatty degeneration is described by various writers, notably by v. Frerichs and Ebstein, the latter meeting with marked fatty change and free fat between cells. Fichtner in two cases of diabetic coma found, in addition to the glycogenic degeneration of Henle's tubes, very marked fatty degeneration of the cortical epithelium, the fat-globules and particles being in each case regularly arranged along the periphery of the cells just beneath the basement membrane; and those tubules solely were affected which contained cloudy epithelium. The epithelia of other parts, as well as the glomeruli and the connective tissue, were apparently normal; and there was no indication of necrotic or inflammatory change. The absence of inflammation was remarkable, especially in one of the cases, which during life presented albuminuria and renal casts, and was therefore considered to be a case of chronic nephritis, with diabetes. The peculiar type of fatty change had been met with by Fichtner in a case of chronic nephritis following alcoholism, but in that case many tubules exhibited a more diffuse degeneration than the variety described. In cases of phosphorus-poisoning the cells are filled with fat-globules of various size and grouping. In seeking for an explanation of the lesion, he remarks that both these patients died comatose, and had the peculiar odor of the breath indicative of acetone and diacetic acid in the urine. Having regard to the previous observations of Albertoni and Pisenti, as well as of Ebstein, which point to the connection between epithelial necrosis in the kidney and the presence of these substances in the urine, it is highly probable that the special kind of fatty degeneration must be referred to these or allied bodies. If fatty degeneration occurs apart from coma, its cause must be found in the excess of sugar. The subject is open to experimental research, which may throw some light upon the subject of renal secretion.

THE LATE DR. FRANK W. ROCKWELL.—At a special meeting of the trustees of St. Mary's Hospital, New York, held May 7th, the following preamble and resolutions were unanimously adopted:

"*Whereas*, We have heard with profound regret of the sudden demise of Dr. Frank W. Rockwell, a most zealous and able member of our hospital staff, and whose untiring efforts and acknowledged professional skill in the special department of which he was chief have contributed largely toward the efficiency and wide reputation of our institution; and

"*Whereas*, By the death of Dr. Rockwell St. Mary's Hospital, which has been the recipient of his valued services since its organization, has sustained a grievous loss; the profession, of which he was a distinguished member, a high-minded, skilful, and conscientious surgeon, and the community at large a benefactor; therefore, be it

"*Resolved*, That, while regretfully testifying to his honorable record and unostentatious labors in the cause of suffering humanity, we deeply sympathize with his bereaved family and respectfully tender them our sincere condolence.

"*Resolved*, That the foregoing be incorporated in our minutes, and a duly authenticated copy thereof be forwarded to his family. (Signed) John Byrne, M.D., John J. Kiernan, James Clyne, Committee."

At the last meeting of the Hospital Faculty of St. Mary's General Hospital, New York, the following resolution was passed:

"The Hospital Faculty of St. Mary's Hospital desire to put on record their deep emotion at the death of their friend and colleague, Dr. Frank W. Rockwell. Dr. Rockwell died at the age of forty-six, on the very threshold of what is regarded as the intellectual prime by all civilized races. Yet he stood in the foremost rank of his profession, not only in the city of his residence, but throughout the country. That fact alone attests his intellectual stature. But those who knew him more intimately than by reputation knew that his character was a rare combination of the mental qualities which compel praise and the softer ones that win without the asking. Endowed with a marvellous capacity for absorbing information, so that he was at home in every branch of his profession; with a delicacy of touch and mechanical skill as an operator that met the requirements of the best surgical technique; with abounding and quick resources, and of excellent judgment, he had as well a gentle nature and a gentle manner, an omnivorous appreciation of humor and art and literature and the changing phases of nature. What better credentials than these can a man have to the esteem of his friends during life, and to their remembrance after death? Physicians though we are, accustomed to death and disease and their ravages and surprises at every turn, a death like this comes home to our bosoms, and we can only inadequately express to the widow of Dr. Rockwell our sorrow and the infinite sympathy that we feel for her and her children. William E. Griffiths, M.D., Landon Carter Gray, M.D., Committee."

CONSANGUINEOUS MARRIAGES.—The author of a recent work on this subject calls attention to the curious ideas which have been generally received in reference to the infecundity of, and physical degradation consequent on, consanguineous marriages. So far as the data given may be trusted—and it is hardly to be supposed that the author holds a brief on the opposite side—there is absolutely nothing to show that marriages between near kinsmen are lacking in fertility, or that they are peculiarly liable to give issue to deformed or diseased offspring. There is no lack of instances of enforced consanguinity, in the matter of marriage, in isolated communities, according to M. Huth, to disprove the assumption that physical degeneration is likely to result from the practice. An investigation into a number of unions between uncles and nieces, nephews and aunts, and cousins in the first and second degree, gives an average of children rather above than below the general average, though this is attributed to some extent to the comparatively early age at which such unions are generally contracted. Breeders inform us that the results are markedly in favor of consanguineous unions between healthy well-bred animals. Unions between men, or animals, of widely different varieties, on the other hand, have a decidedly injurious effect on the offspring, and beyond a certain limit are almost absolutely sterile. Mulattoes and the half-breeds of India and America are striking examples of the deterioration to which such racial disparity gives rise. The great point to bear in mind is that the union of individuals with the same morbid tendencies intensifies the taint, and that, too, quite irrespective of any consanguinity. The moral, according to the author, is that the reasons which have led to the prohibition of marriages within certain degrees of relationship are social, and not physiological.—*Medical Press and Circular.*

SUMMONING THE DOCTOR WITH A CANNON.—They have rather a curious way of summoning a doctor, when the services of one are required after nightfall, at Bedloe's Island, on which the big statue of Liberty stands, and as all communication with the mainland and Governor's Island is suspended during the night, a cannon is fired. This at once attracts the attention of the sentinels on Governor's Island, and a surgeon from the garrison is soon on his way to Bedloe's Island in a row-boat. In this way Dr. Pilcher was called the other night, and he arrived in time to present a fine boy to one of the officers stationed there.—*Boston Medical and Surgical Journal.*

SALICYLATE OF SODIUM IN PRURITUS.—Dr. Icard reports, in *La Gazette Médicale*, a case of obstinate pruritus, which had resisted a number of remedies, but was quickly relieved by the internal use of sodium salicylate in doses of forty-five grains a day.

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EYE-STRAIN AS A CAUSE OF HEADACHE AND NEURALGIA.

WITH REMARKS CONCERNING THE PREVALENT FALLACIES RESPECTING THESE CONDITIONS.

BY AMBROSE L. RANNEY, A.M., M.D.,

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SOME time since, I encountered in my reading the following extract from the pen of a great French philosopher:

"Nature fights with disease a battle to the death. A blind man armed with a club—that is, a physician—comes in to make peace between them. Failing in that, he lays about him with his club. If he happens to hit disease he kills disease; if he hits nature he kills nature."

There is in this charming piece of satire more than a single atom of truth.

In nothing is it better illustrated to-day than in the literature of medicine relating to neuralgias and headache.

There are undoubtedly more sufferers among the community at large from these two forms of paroxysmal pain than from any other morbid conditions. This statement is, I think, sustained by all carefully prepared statistics. The amount of literature which has lately been contributed to this subject would also indicate to the candid reader not only their great prevalence, but the peculiar intractability, in some cases, of these types of pain in spite of drugs.

A very large percentage, moreover, of victims to headache and neuralgia fail to disclose any positive evidences of actual disease, in spite of the greatest care in searching for a cause. The nerve-trunks affected, the brain itself, or its coverings, the heart, the lungs, the kidneys, the liver, the stomach, and the intestine, etc., seem in most cases to be capable of performing their normal functions, save when some temporary disturbance (not generally referable to any definite cause) occurs simultaneously with, or prior to, one of these paroxysmal attacks of pain. Such disturbances are too frequently regarded by various observers as of great significance, but to my mind clinical experience teaches us that they are to be classed rather as mere coincidences, or as a part of the attack itself.

We, as a profession, have yet much to learn respecting the remote effects of a disturbed nervous equilibrium upon the organs of the chest and abdomen.

We have also, in the light of modern physiology, much to unlearn, many inherent prejudices to overcome, many clinical conclusions to discard (that have grown upon us from defective habits of reasoning) before our patients can derive the full benefits of our own advancement.

If we start out, for example (as many physicians do), with the premise (generally an incorrect one) that every patient who has a disturbed stomach, a sluggish bowel, or clay-colored fæces prior to, or in connection with, a headache, owes his headache directly to his stomach, liver, or bowel, and must base his recovery upon some drug which shall re-establish their action, many patients will become imbued with ideas which may, perhaps, indefinitely postpone, or totally preclude, the opportunity of obtaining permanent relief by the removal of a cause not affected by drugs, and too often unsuspected by the patient.

Too many medical men ignore the fact to-day that an underlying cause exists in almost every case of intractable neuralgia or headache.

Yet they speak with assurance respecting the clinical significance of some slight draught of air; look for some trivial excess or error of diet as an important factor; condemn hastily, and on general principles, some acquired habit which has been tolerated by the patient for years without apparent injury (such as tobacco, for example); shift the responsibility from themselves upon that much-abused organ the liver; and in countless ways strike wildly about with their club of unscientific deduction (according to the French philosopher), hoping to kill a disease whose causes and nature they may not have carefully investigated.

A bad tooth, impacted wax within the ear, eyes with defective refraction, imperfectly balanced eye-muscles, an obstruction to the passage of air through one or both of the nasal cavities, some hidden rectal irritation, and many forms of pelvic disease too often remain unrecognized in many patients as factors in causing headache and neuralgia, while learned dissertations and useless medication are offered to the patient as a means of relief.

Hardly a day passes that I do not see some sufferer of this class in my office, who has passed through many years of periodical suffering from frequent headaches or persistent neuralgic attacks unnecessarily, simply because the exciting cause has either never been sought for, or investigated by imperfect methods and with too little care.

Headaches and neuralgias may be discussed under three prominent classes—the toxic, organic, and reflex varieties. Of these, the latter is the most common.

There is, unquestionably, a certain proportion of individuals (where headache is a marked symptom) that owe their suffering to some abnormal condition of the blood.

Among this class of causes we must recognize the poisoned blood of Bright's disease, the saccharine blood of diabetes, the decrease of red and white corpuscles observed in anæmia and leucocythæmia, the blood-changes produced by malarial poisoning, and some typical cases of poisoning by lead, mercury, arsenic, alcohol, etc.

It must be acknowledged, however, that sufferers from these forms of headache are comparatively infrequent, when contrasted with the thousands in which no evidence of actual disease can be discovered by scientific means. Yet sufferers of this class are too commonly encountered to justify the omission of a careful examination of the urine in any individual case—an excretion whose constituents decide quite conclusively the existence or non-existence of any typical morbid state. If deemed necessary, the blood also, and other fluids of the body can be subjected to scientific investigation. It is certainly a culpable oversight, in any case where headache exists, to neglect a careful analysis of the urine.

Again, there is encountered a class of patients who suffer from more or less obstinate and intractable headache and neuralgia as a result of organic disease of the brain or its coverings.

Certain forms of spinal disease are likewise apt to create more or less excruciating forms of pain that might easily be, and too often are, mistaken for neuralgia in some of its forms. These do not, however, as a rule, cause headache, if the spinal nerves are alone involved.

In the cerebral and spinal types of cases the ophthalmoscope becomes a valuable instrument, since it will

often show alterations in the retina or "disk." Moreover, other symptoms referable to the power of motion, sensation, or the special senses are very apt to exist and to point directly to the presence of organic disease of the nerve-centres.

While it is advisable, therefore, to exclude organic disease of the nerve-centres by appropriate tests employed for that purpose in every case of intractable headache or neuralgia, still it may be said that such cases constitute but a small proportion of those who seek medical aid for the symptoms under consideration in this paper.

Admitting, then, the fact that the presence of headache and neuralgia may, in some instances, be but a clinical evidence of organic disease, it is our manifest duty in every case to exclude, as far as it is possible to do so, the existence of organic disease in each individual case; or, if such be detected, to combat it by wise therapeutical measures. On the other hand, the comparative percentage of such cases is too small, and the possibility of other causes (as coexisting factors) too large, to justify us today in neglecting to take into account in any case the various types of reflex disturbance to the nervous centres which clinical experience has shown may both modify and cause severe cranial pain or neuralgic paroxysms.

I have deemed it wise to insert these few remarks as a preface to my paper upon the "Relationship of Eyestrain to Headache and Neuralgias," for the following reasons:

1st. Because the profession at large has not, in my opinion, woke up thoroughly to the fact that a very large percentage of headaches and neuralgias can be relieved, and often radically cured, without drugs.

2d. Because most of the later contributions to this subject have very clearly demonstrated that the authors of these papers even are singularly apathetic to facts that have already passed beyond the limits of unsupported theory, and are being recognized by many of the eminent scientists of our day.

3d. Because remarkable cures of headache and neuralgia are being daily forced upon professional notice, which have been brought about solely by the removal of some source of reflex irritation, such, for example, as decayed or ulcerated teeth, a deflected nasal septum, and errors of focus or of the muscular adjustment of the visual apparatus.

4th. Because any new therapeutical measure meets with far less opposition than does the introduction of a scientific method of search for obscure causes of disease. The public has been educated to want drugs, and doctors to rely too much upon them.

5th. Because many of the older views respecting the underlying factors of disease are destined to be overthrown by many of the later discoveries in physiology, bacteriology, etc.

6th. Because all views not in accord with popular belief are constantly being misrepresented, misunderstood, and misapplied by those who either do not wish to know them (from personal prejudice), or who have had little practical experience in the methods advocated. The history of medical progress is replete with examples of violent opposition to all innovations—such, for example, as vaccination, Listerism, ovariotomy, etc.

7th. Because scientific methods of precision require a special training of mind and eye and hand, not commonly required of undergraduates in our medical schools.

Not long since I received a letter from a physician (who had asked of me some suggestions respecting the ocular treatment of a case that had proven intractable to all medical agents) in which he says:

"What troubles me now is the fact that I am not sufficiently posted on the diagnosis of the eye to use your valuable information. I feel very much inclined, however, *to go it blind on the case I spoke of, and give it a trial.*" [1]

Such an evident misconception of the experience, skill, and care required in the diagnosis and treatment of an error in the focus or a defective muscular adjustment of the eyes requires no further comment from me.

For some years past it has been my custom to examine repeatedly, and with care, the visual apparatus of every patient sent to me for the relief of headache and neuralgia. I have already published, from time to time, many cases where this line of research has been followed by marked and permanent benefit.[1]

I deem it worthy of remark, in this connection, that less importance is being attached to-day than formerly to the clinical determination of modifications in the calibre of the blood-vessels of the brain.

The conditions known as "cerebral congestion" or "cerebral anæmia" of certain authors who have written extensively upon headache and neuralgia are very often the results of underlying factors.

Their existence (as has been claimed) may sometimes be revealed by the ophthalmoscopic examination of the vessels of the retina and confirmed by the effects of nitrite of amyl upon the patient; but when so, they are probably to be regarded rather as an evidence of a functional derangement of the vaso-motor system of nerves than as permanent factors in headaches or neuralgias.

I have known many patients who have followed, with negative results, a prolonged course of treatment (by ergot, bromides, amyl, etc.) which was based upon the examination of the retinal vessels; and I have often seen them recover from their headaches and neuralgias without drugs when an anomaly of refraction or of the muscular adjustment of the eyes was corrected.

I would not be construed as denying that the blood-vessels of the brain might not have been abnormally dilated or peculiarly contracted in many of these patients at the time when their retinal vessels were examined; nor would I utterly reject the hypothesis that the retina sometimes affords us a valuable means of determining by our sense of sight the condition of the cerebral vessels in any given individual.

What I do mean to assert is this: That changes in the cerebral circulation (as is often observed in the case of a blush upon the cheek) may be caused by subtle nervous influences that ergot, bromides, nitrite of amyl, or other drugs will not arrest; that a classification of headaches or neuralgias which is based upon so variable a sign is unscientific; and that any line of medication which is directed toward this condition alone is very liable to be unsatisfactory both to the physician and his patient, sooner or later.

To illustrate this point I will mention a remarkable experience of my own that impressed me strongly at the time.

Some ten years ago, when almost in despair from continuous and intractable headache, and doubtful of my ability to long endure it, two oculists of equal prominence and ability were asked by me to examine my retinæ by means of the ophthalmoscope.

One diagnosed my condition as "typical nicotine poisoning of the retina;" the other discovered what seemed to him to be conclusive evidences of "congestion of the brain," that nothing but prolonged rest from work, in his opinion, could relieve. Neither suggested the detection of any "lateral" refractive error or the use of glasses. My sight was apparently perfect and unusually acute.

Subsequently the instillation of atropine into my eyes (which was used at my earnest solicitation) and the correction by proper convex glasses of a hypermetropia of 3.00 diopters (not previously suspected) restored me to health and comfort, as if by magic. A complete and immediate cessation of all pain for over nine months followed the correction of my refractive error; and for many years I have been almost entirely free from pain, in spite of continuous eye-work at my desk and elsewhere.

[1] Italics my own.

[1] New York Medical Journal, January, 1888; Lectures on Nervous Diseases, Philadelphia, 1888 (F. A. Davis, Publisher); Medical Register, Philadelphia, November 19, 1887.

A Tabulated Record of Fifty Consecutive Cases of Headache and Neuralgia treated exclusively by the Correction of Eye-strain.

Case.	Age.	Sex.	Condition.	Symptoms.	Duration.	Heredity.	Visual tests.		Treatment.	Remarks on Case.
							Refraction.	Muscular.		
1	50	M.	Married.	Sick-headaches (very frequent and severe). Asthenopia.	Since early childhood.	Headaches in all paternal ancestry and in brothers and sisters. Phthisis common among maternal ancestry.	R. + 0.75^s L. + 1.00^s + 0.50^c	Right hyperphoria, 2½°. Exophoria, 1°.	Full correction of refractive error by glasses. 1° prism for R. hyperphoria.	This patient is still under observation, as "latent" hyperphoria is suspected to exist. No headaches have occurred since the glasses have been worn. The muscular adjustment of the eyes will soon be rectified by a graduated tenotomy
2	26	M.	Single.	Sick-headaches. A peculiar nervous hesitancy of speech. Mental depression of a marked character. Mental weakness (since childhood). Extreme nervousness and excitability.	Since 12th year. do. do. do.	Father and two brothers have severe headaches. Ancestry are peculiarly nervous and excitable.	Manifest emmetropia. Atropine not used.	Esophoria, 15°. Homonymous diplopia, 3° (with red glass).	Graduated tenotomies of both interni.	Patient had to leave for the West. He refused atropine tests on that account. After the tenotomies the power of abduction was increased from 1° to 8°. No headaches have occurred since operation. Patient lately reports a great change in his general health and a sense of rest in his eyes never experienced prior to the operation. The mental power of this patient already shows marked improvement.
3	20	F.	Single.	Supra-orbital neuralgia. Frequent fainting attacks. Complete amenorrhæa. Melancholia. Dyspepsia. Asthenopia.	Since childhood. do. For 2 yrs. Since childhood. For 2 yrs.	Mother had frequent fainting attacks. One brother has severe headaches. Two cases of epilepsy on paternal side. Diabetes very common on maternal side.	R. + 0.50^s + 0.50^c L. + 1.25^c	Right hyperphoria, 6°. Exophoria, 1°.	5° R. hyperphoria prism given.	Patient is still under treatment, but has been almost entirely relieved of her neuralgic paroxysms by the glasses ordered. She is much less depressed and has had no fainting attacks. A graduated tenotomy is to be performed shortly, to correct the hyperphoria.
4	30	M.	Married.	Occipital headache. Insomnia. Hesitancy in speech. Fainting attacks. Dyspepsia. Asthenopia.	Since childhood. do. do. 2 years.	Father is a dyspeptic and rheumatic. Mother is at times insane. Headaches are a family trait. One uncle was insane. One cousin had epilepsy.	R. + 1.50^s L. + 1.25^s	Right hyperphoria, 2°.	Patient was given for constant wear: R. + 1.50^s L. + 1.25^s	This patient's attacks were often accompanied by symptoms of *pitit mal* He is still under observation, but has experienced great relief from his headaches since his glasses were ordered. No attacks of loss of consciousness have occurred since the glasses were prescribed.
5	53	M.	Married.	Severe headache, frontal and occipital. Insomnia of an intractable type. Prostatic and urethral irritation, causing the patient great anxiety and discomfort.	Since childhood. 2 years. 2 years.	Father had severe headaches. Mother and two sisters had phthisis.	R. + 1.50^s L. + 1.50^s + 0.50^c	Right hyperphoria, 4°. Esophoria, 1°.	Patient was given + 1.50^s 1½° prism in each eye to correct right hyperphoria.	This patient expresses himself as almost completely cured of headache and insomnia by his glasses alone. His business engagements have thus far prevented a radical step toward the correction of his hyperphoria. His prostatic neuralgia has been very decidedly relieved without any local treatment thus far.
6	28	F.	Married.	Neuralgia (very severe and chiefly of the supra-orbital and occipital types).	Since 5th year.	Father is very nervous. Mother has neuralgic headaches. Paralysis in paternal ancestry. Phthisis on maternal side.	R. + 0.75. L. + 0.75.	Left hyperphoria, 6°. Esophoria, 0°–6°.	Graduated tenotomy of right inferior rectus.	This patient reports that a great change for the better has occurred since the operation. Her neuralgic attacks have been decreased 75 per cent. and her physical condition is greatly improved.
7	13	M.	Single.	Headache (in frontal and occipital regions). Has been almost constant and is often accompanied by vomiting.	3 years.	Headaches and eye-defects are common on the maternal side. One paternal uncle has headaches, and another incipient ataxia. Rheumatism is a family trait on paternal side.	R. + 0.25. + 0.50^c L. + 0.25. + 0.50^c	Left hyperphoria, 3½°.	Given for distance, + 0.50^c Graduated tenotomy of right inferior rectus.	This patient has had no headache for several months since the operation. He still suffers from occasional gastric disturbances. There is reason to suspect some "latent" hyperphoria in this case, which may demand further operative work.
8	43	F.	Married.	Sick-headaches (so frequent and severe as to unfit the patient for household duties for the past ten years).	Since childhood.	....	R. + 1.00^c L. + 1.00^c	Right hyperphoria, 5½°. Esophoria, 2°–8°.	Given for constant wear, + 1.00^c Graduated tenotomy of left inferior rectus.	This patient reports a very marked decrease of her headaches since the operation, and a remarkable increase of physical strength. The last report states "that she can endure fatigue better than for many years and has headaches only at long intervals." Further operative work will probably be demanded in this case.
9	26	F.	Single.	Supra-orbital and occipital neuralgia. Asthenopia (of many years' standing). Dyspepsia and vomiting.	Since 12th year. For 6 yrs. past. For many years.	.....	R. − 2.25^c L. − 1.00^c	Right hyperphoria, 2°. Esophoria, 14°.	Given for constant wear: O. D. − 2.25^c O. S. − 1.00^c Graduated tenotomies of left inferior rectus and of both internal recti.	This case has proved to be a very difficult one to treat. She had homonymous dipiopia, together with a marked hyperphoria. Her ability to use the eyes in sewing and reading has been greatly improved, and her neuralgic paroxysms and vomiting have been markedly benefited, but not arrested as yet. She is still under observation, and further operative work will have to be done later on.
10	30	F.	Married.	Frequent and severe sick-headaches. Asthenopia (of a severe type). Nervous prostration (lasting for many months).	Since 9th year. Several years. 5 yrs. ago.	Father and sister are subject to sick-headaches. Maternal grandmother has neuralgia.	R. + 1.25^s L. + 1.25^s	Right hyperphoria, 5°. Esophoria, 15°.	Graduated tenotomies of left inferior rectus and of both interni.	The last reports from this patient give assurances of almost a perfect cure. Her headaches have disappeared. Her asthenopic symptoms are subsiding fast. Her physical strength is almost entirely restored.
11	14	M.	Single.	Frequent and protracted headaches—last most of the time; are frontal and occipital. Asthenopia. Obstinate constipation.	2 years. 4 years. Since childhood.	Phthisis and epilepsy in both paternal and maternal ancestry. One brother has epilepsy.	R. + 0.75^s L. + 0.50^s + 0.25^c	Esophoria, 12°. Left hyperphoria, 7°.	Graduated tenotomies on both interni and right inferior rectus.	This case is still under observation and has proved to be quite intractable. The muscular anomalies of the orbit have been extreme, and sufficient time has not elapsed for the patient to get the full benefits of their correction. He reports that he "has much less asthenopia and headache, and is now able to study with little distress."

A Tabulated Record of Fifty Consecutive Cases of Headache ana Neuralgia treated exclusively by the Correction of Eye-strain.—Continued.

Case.	Age.	Sex.	Condition.	Symptoms.	Duration.	Heredity.	Visual tests. Refraction.	Visual tests. Muscular.	Treatment.	Remarks on Case.
12	30	M.	Single.	Headaches (chiefly frontal). Melancholia. Constipation.	18 mos. do. 6 years.	Mother died of cancer; father of typhoid fever; maternal aunt died of phthisis. Headaches very common on both sides.	R. + 0.25. − 1.00^c L. Emmetropia.	Esophoria, 7°.	Given for constant wear: + 0.25 = − 1.00^c for right eye. Graduated tenotomy of both interni.	This patient had been under the care of many prominent physicians without obtaining any relief from drugs. He writes me as follows: "I pass many pleasanter days now than for many years past." His improvement, when last seen by me, was very apparent. His headaches are less frequent and severe.
13	26	F.	Married.	Sick-headaches (very severe and frequent). Asthenopia. Weakness in arms and legs, also fainting attacks. Severe pain between the shoulder-blades.	Since childhood. For past 3 years. For past 3 years. For past 3 years.	Father died of heart disease. Mother had severe headaches and vertigo. Maternal grandfather was insane.	R. + 0.50^c L. + 0.50.	Right hyperphoria, 4°. Esophoria, 2°.	Graduated tenotomy of left inferior rectus, 1° prism for balance of right hyperphoria still remaining.	This patient had been under constant medical care for years before I saw her. Her symptoms were generally attributed to uterine trouble, but all treatment so directed proved unavailing. Although her eye-muscles are not yet perfectly adjusted, she has experienced a very marked change for the better. Her headaches and asthenopia have been decreased over 75 per cent., and the pain in the back has almost entirely ceased.
14	46	M.	Married.	Sick-headaches. Nervous prostration. Nervous weakness and morbid fears after any unusual strain.	Since childhood. 9 yrs. ago. Several years.	Father had severe headaches and died of Bright's. Mother died of cerebral softening. One brother died of "neuralgia of brain." Mental diseases on paternal side are common.	R. + 1.00. + 0.25^c L. + 1.00. + 0.25^c	Esophoria, 6°.	Given for constant wear: + 0.25^c = + 0.25^c Graduated tenotomy of left internal rectus.	This patient still has an occasional headache, but at long intervals. He expresses himself, in a late communication, as delighted with the marked change which has occurred. His physical condition has improved rapidly since the operation.
15	28	F.	Single.	Constant headache. Pain in the back—which has proven very rebellious. Asthenopia. Physical weakness (to such an extent as to render walking almost impossible). Insomnia.	3 years. Since 14th year. Since childhood. 10 years.	Headaches and neurasthenia very common on maternal side.	R. + 0.50. L. + 0.50.	Esophoria, 15°. Homonymous diplopia of 2° (with red glass). Right hyperphoria, 4°.	Graduated tenotomies of both interni, and of the left inferior and right superior recti.	This patient wore a plaster jacket for over a year for her spinal pain; and was also treated for uterine conditions, withoutany relief to her symptoms. Her ocular conditions proved to be very complicated and difficult to fully correct. She now is almost entirely free from spinal pain—has only occasional headaches—and is able to walk several miles each day.
16	16	F.	Single.	Constant headache (without any intermission). Chorea, which had practically disappeared before I saw the patient.	Since 8th year. In childhood.	Father has had several attacks of *petit mal*. Mother had sick-headaches and nervous prostration. Mother's family is very nervous. Paternal grandmother and uncle died of phthisis.	R. + 1.00^s L. + 1.00^s	Left hyperphoria, 7¾°, most of which was latent. Exophoria, 9°.	Graduated tenotomies of right inferior rectus, left superior rectus, and both externi.	A marked improvement in this case has been effected, but the patient still has headache at times, which is always intensified by close application of the eyes.
17	36	F.	Married.	Headaches, always after any fatigue, as shopping. Asthenopia.	For some years.	Mother died of phthisis. One sister is a victim to headaches.	R. + 1.25^c L. + 1.25^c	Exophoria, 3°.	Given for constant wear, + 1.00^c	This patient made a complete recovery by the aid of cylindrical glasses. The last report I received was that she "had been for several months absolutely free from headache."
18	30	M.	Married.	Sick-headaches (these headaches lasted 2 or 3 days in each week). Indigestion. Constipation.	5 years. do. do.	Father died of gastric trouble. One brother has headaches.	R. + 4.50^s + 0.25^c L. + 4.50^s	Esophoria, 8°.	Given for constant wear, + 2.50^s Graduated tenotomy of right internal rectus.	Patient left for his home in Kansas City, Mo., with instructions to report the results of treatment. Although many months have elapsed no report has been received.
19		F.	Married.	Supra-orbital neuralgia. Insomnia. Marked twitching of the eyelid.	12 years. do.	One sister has neuralgia.	R. + 0.75^s + 0.75^c L. + 1.00^s + 0.50^c Reads No. 1 Jaeger's type with + 1.00^s	Esophoria, 2°.	Given for constant wear: O. D. + 0.75^c O. S. + 0.50^c For reading, + 1.00^s was added to each of the cylinders.	This patient has reported that she is "completely cured, and is in perfect health." She has had no pain for over a year.
20	25	F.	Single.	Sick-headaches. Asthenopia. Constipation.	Since 15th year. One year. do.	Motherhad headaches when young. Phthisis on maternal side.	R. − 0.50^s L. − 0.50^s	Esophoria, 6°.	Given for distance, − 0.50^s	This patient refused surgical treatment of her esophoria. She would not tolerate prisms, as they caused distress. She returned to the West without any benefit.
21	44	F.	Married.	Neuralgia. Nervous prostration (3 attacks). Chronic constipation.	20 years. do.	One brother and one sister died of phthisis. Phthisis common on paternal side.	R. + 1.75^s L. + 1.75^s	Esophoria, 3°.	Given for constant wear: + 1.00^s; for reading + 1.50^s Graduated tenotomy of left internal rectus.	The last report from an oculist to whom I intrusted this case, after her departure from New York, gives assurance of a decided physical improvement, but not, as yet, a radical cure of the neuralgia. A latent hyperphoria is suspected to exist, which is still under his observation.
22	27	M.	Single.	Headaches (very severe, occurring 3 or 4 times a week).	Since 15th year.	Mother died of cancer.	R. − 2.00^s L. − 2.00^s	Esophoria, 4°.	Ordered for constant wear, − 1.50^s, combined with 1° prism, base out, in each eye.	This patient had gone over six months without a headache when last heard from. He expresses himself as "astounded at the magical change which followed the use of glasses."
23	33	F.	Single.	Sick-headaches (very severe and frequent). Morbid and uncontrollable fear of company, sudden noises, etc. Very emotional. Twitching of the eyeball. Difficulty in raising the upper lids.	Sinceearly childhood. 4 years. do. do. do.	Father died of phthisis. Phthisis common in paternal ancestry. One maternal uncle died of phthisis.	R. + 0.50^s + 0.50^c L. + 1.00^s	Exophoria, 5°. Left hyperphoria, 4°.	Given for constant wear: O. D. +0.50^s = + 0.50^c O. S. + 1.00^s Graduated tenotomies of both externi and right inferior rectus.	This case was one of great interest to me. She had been under the care of several oculists, who had simply corrected the astigmatism of the right eye. Her mental condition caused serious alarm. The results of treatment have been very gratifying. Patient has entirely recovered control of her emotions, and has but few headaches. She often passes many consecutive weeks without any pain.

A Tabulated Record of Fifty Consecutive Cases of Headache and Neuralgia treated exclusively by the Correction of Eye-strain.—Continued.

Case.	Age.	Sex.	Condition.	Symptoms.	Duration.	Heredity.	Visual tests.		Treatment.	Remarks on Case.
							Refraction.	Muscular.		
24	45	M.	Married.	Neuralgic headaches (very severe and almost constant). Vertigo (after looking intently at any object). Dyspepsia and acid stomach. Confusion of thought. Insomnia.	Since early childhood. 30 years. Since childhood. 15 years. do.	Father had headaches. Mother died of brain disease. Everyone of his maternal ancestry suffer severely with headache and neuralgia. One brother died of brain disease. Two sisters suffer terribly with headache.	Emmetropia, Presbyopia, + 1.25s	Esophoria, 12°. Left hyperphoria, 1°.	Graduated tenotomies of both interni and right inferior rectus.	Patient was a physician. He had regarded his condition as incurable. A remarkable heredity existed as regards headache, neuralgias, dyspepsia, and brain diseases. He is now practically well. An occasional headache and a weak stomach indicate that the eye-strain is not entirely removed. He still shows some esophoria at times.
25	31	M.	Married.	Neuralgic headaches (very severe and only controlled by large doses of morphine). Habitual constipation. 3 per cent. of sugar in the urine (analysis of Dr. G. T. Elliott, of New York).	6 years.	Mother had severe neuralgic headaches.	R. + 1.50s L. + 1.50s	Esophoria, 5.° Left hyperphoria, 3°.	Given for constant wear, + 0.50s Graduated tenotomies of right internus and left superior rectus.	This case was pronounced by Dr. G. T. Elliott, of New York, as "one of typical diabetic headache." Without any drugs, his sugar was reduced to a half of one per cent. within a few weeks, by the relief of abnormal muscular tension in the orbit. The neuralgic attacks were totally arrested for a time, but the patient has thus far failed to allow of a complete restoration of muscular equilibrium.
26	29	F.	Single.	Severe sick-headaches. Asthenopia.	Since childhood. do.	Father suffers with neuralgia. One brother suffers with severe headaches.	R. + 3.00s L. + 2.50s	Exophoria, 6°.	Given for constant wear: O. D. + 1.50s O. S. + 1.00s Graduated tenotomies of both externi.	Very marked benefit, for a time, in regard to headaches and asthenopia. Further correction of a "latent" esophoria that disclosed itself after the tenotomies were advised; but the patient has thus far failed to report at my office.
27	28	M.	Single.	Constant dull headache. Habitual constipation. Cold hands and feet. Difficulty in concentrating the mind.	.....	Father and several paternal relatives died of phthisis. Mother has nephritis and has had left hemiplegia. One sister has hystero-epilepsy and asthenopia.	R. + 1.00s L. + 1.00s	Esophoria, 16°. Right hyperphoria, 3½°.	Graduated tenotomies of both interni and of the right superior rectus.	In this case, the results have thus far been negative, in spite of patient watching and repeated eye-tests. The patient has also been treated for deflection of the nasal septum by Dr. Delavan, of New York, without relief to his head. Professor J. W. Wright, of New York, also, at my suggestion, treated the patient for an anal fissure and hemorrhoids; but no improvement of headache has followed.
28		M.	Married.	Sick-headaches. Insomnia. Mental depression. Sense of pressure in occipital region.	 4 years. do. do.	Headaches are common in the maternal ancestry.	R. + 0.50s + 0.75c L. + 1.00s	Esophoria, 2°.	Given for constant wear: O. D. + 0.75c O. S. 1° prism, base out.	Patient has never reported the results of wearing his glasses. Friends of the patient state that he is now able to attend to his business in a distant city much more regularly than before.
29	27	M.	Single.	Neuralgic headaches. Intractable insomnia. Asthenopia. Indigestion. General nervousness.	Since childhood. do. do.	Father is very nervous and has severe headaches. Two brothers are also very nervous and have severe headaches.	Emmetropia.	Left hyperphoria, 2°. Esophoria, 15°.	Graduated tenotomies of right inferior rectus and of both interni.	This patient is now entirely cured of headache and his nervous dyspepsia. His asthenopia has almost entirely disappeared.
30	35	F.	Married.	Sick-headaches. Difficulty in raising the eyelids. Transient attacks of numbness of the lips and paresis of the limbs. Constant headache.	Since childhood. 3 years. do. do.	Father died of an abscess. One aunt has severe headaches.	R. + 0.50s L. + 0.50s	Left hyperphoria, 1½° Esophoria, 12°.	Graduated tenotomies of right inferior rectus and of right internal rectus.	Patient reports her condition as one of practical restoration to health. Her headaches are rarely developed, and only after some overexertion, loss of sleep, or fatigue.
31	27	M.	Single.	Supra-orbital neuralgia (almost without cessation). Dyspepsia. Pain in right eye. Has been in very delicate health.	10 years. do. do. Since childhood.	Father suffers with his eyes. Mother and sister have neuralgia. One maternal uncle died of phthisis.	R. + 1.00s L. + 1.00s	Esophoria (totally latent) amounting to 17°.	Graduated tenotomies on both interni.	This patient has lately shown some esophoria that was not manifested for ten months after the last operation. He has been restored to health and comfort, and has passed many months without pain.
32	43	M.	Married.	Sick-headaches. Dyspepsia. Severe insomnia. Partial right hemianæsthesia. Transient diplopia.	Since childhood. 25 years. 5 years. 6 years ago. When a child.	Father had headaches. Two sisters and two cousins died of phthisis.	R. + 1.00s L. + 1.00s	Esophoria, 30° (mostly latent). Left hyperphoria, 2°.	Graduated tenotomies of both interni and of right inferior and left superior.	Headaches were improved but no effects upon the distressing insomnia were obtained. The patient left for the distant West, to live on a ranch, before his esophoria was fully corrected.
33	36	M.	Married.	Sick-headaches. Nervousness and irritability. Weak heart. Indigestion.	Since childhood.	Phthisis on maternal side. Paternal ancestry were all dyspeptics. Maternal grandfather was insane for a time. One maternal uncle was "queer," disappeared suddenly, and has never been heard from.	R. + 2.25s L. + 2.00s	Esophoria, 13°.	Given for constant wear: O. D. + 1.25s O. S. + 1.00s Graduated tenotomies of both interni.	This patient reports that he is "practically well of headaches, and cannot get along without his glasses." He has gone to Kansas City to practise medicine.
34	26	F.	Single.	Neuralgic headaches. Asthenopia. Persistent trembling in hands and arms. Rigidity of neck and "choking-spells," when attempting to speak or when excited. Severe pain in the neck. Contracture of hands and arms.	Since 10th year. do. 4 years. do. do.	Patient knew little of her ancestry.	R. + 0.75s L. + 0.75s	Esophoria, 20° (mostly latent). Left hyperphoria, 3°.	Graduated tenotomies of both interni, and of right inferior and left superior rectus. A full correction of hyperopic by glasses.	For full report, see history of this case. The patient is practically cured, but has some choreic symptoms remaining, which appear under undue excitement.

A Tabulated Record of Fifty Consecutive Cases of Headache and Neuralgia treated exclusively by the Correction of Eye-strain.—Continued.

Case.	Age.	Sex.	Condition.	Symptoms.	Duration.	Heredity.	Visual tests.		Treatment.	Remarks on Case.
							Refraction.	Muscular.		
35	28	M.	Single.	Sick-headaches. Nervousness and some tremor when excited. Partial impotence.	Since childhood. do. 5 years.	Mother has headaches. One brother and one sister have severe headaches.	R. + 0.50^s L. + 0.50^s	Esophoria, 11°.	Graduated tenotomies of both interni.	Cured of headache. The patient is much less nervous, and has nearly regained his sexual powers.
36	25	M.	Single.	Headaches. Periodical attacks of vomiting and indigestion. Slow heart's action. Cold extremities. Physical weakness. Irregular action of bowels (constipation and diarrhœa).	Since childhood. do. do. do. do. do.	Mother has headaches, and has had pulmonary hemorrhages. Father has neuralgia of the stomach. Maternal grandmother and two uncles died of phthisis.	R. + 0.50^s L. + 0.75^c	Esophoria, 20°(mostly latent).	Graduated tenotomies of both interni. Spherical glasses for reading.	This patient was a divinity student. He was sent to me from Vermont. His recovery was rapid and complete. His last communication is full of expressions of delight over his ability to pursue his studies.
37	..	F.	Single.	Headache (violent sick-headache, which during past few years became almost uninterrupted). Obstinate dyspepsia.	Since childhood. do.	Father suffered with headache and died of hemiplegia. Phthisis in maternal ancestry.	R. + 3.00^s L. + 3.00^s	Exophoria, 9°.	Given for constant wear: + 1.75^s Graduated tenotomies of both externi.	Patient reports that she has "not had a headache for past six months:" also that her "physical condition is better than at any time in her life."
38	52	F.	Married.	Sick-headaches (very severe and frequent). Attacks of tremor. Hyperæsthesia of entire body. Neuralgic attacks Insomnia.	Since childhood. do. 30 years. do. do.	Father had severe headaches, and was slightly cross-eyed. Mother was a confirmed invalid. One sister has terrible headaches. One brother is a great nervous sufferer. Headaches and nervous prostration are family traits on both sides.	R. + 1.25^s L. + 1.25^s + 0.25^c	Esophoria, 14°(mostly latent). Right hyperphoria, 1½°.	Given for constant wear: + 1.25^s O. D, + 1.25^s = + 0.25^c O. S. Graduated tenotomies of both interni and of the left inferior rectus.	Headaches almost totally arrested. Insomnia cured, as is also the tremor and hyperæsthesia.
39	21	F.	Single.	Sick-headaches (very severe and constant when she uses her eyes). Asthenopia.	Since 15th year. do.	Father, mother, and sister have headaches and neuralgia, and weak eyes. Phthisis frequent among paternal ancestry.	Manifest emmetropia. Atropine not used.	Esophoria, 10°. Right hyperphoria, 2°.	Given for constant wear, 2° prism, baseout, in each eye.	This patient went nearly six months without a headache after her prisms were ordered. The parents refused atropine and operative procedure. She has had some return of headache lately.
40	46	F.	Single.	Headaches (chiefly orbital and frontal). Neuralgia in 5th nerve. Obstinate insomnia. Constipation. Palpitation of heart.	Since childhood.	Mother, maternal grandmother, one brother, and one sister had phthisis; also several paternal aunts. Father died of chronic diarrhœa.	R. + 3.50^c L. + 1.50^s Presbyopia. + 3.00^s	Exophoria, 6°.	Given for constant wear: + 1.50^c O. D, + 1.50^s O. S.	Results negative. The patient had one very defective eye which could not be rectified, and which made her tests very unreliable. No encouragement of marked improvement could be given her.
41	38	M.	Married.	Sick-headaches. Intense suffering from light. Tight band at temples and numbness of head. Insomnia. Irritability and physical weakness. Diplopia.	Since childhood. 2 years. do. do. do. At times.	Father died of heart disease and was very nervous. One sister has severe headaches. Most of the family have severe migraine. One paternal cousin died of phthisis.	Emmetropia.	Esophoria, 9°. Right hyperphoria, 3°.	Graduated tenotomies of both interni and of left inferior rectus.	The patient made a practical recovery. He has headache and asthenopia only at intervals, and always from excessive use of the eyes in preparing sermons, etc.
42	28	M	Single.	Frontal headache. Neuralgia. Asthenopia. Intolerance of light.	5 years. Until 1883. Since childhood. do.	Mother had headache and neuralgia and died of a tumor. One brother has neuralgia. Insanity and hypochondria common on maternal side. Maternal grandfather had cancer.	R. + 4.00^s L. + 4.00^s	Esophoria, 7°.	Given for constant wear: + 2.50^s = 1¼° prism, baseout, in each eye.	Patient reports that he now practises medicine with greater comfort than for many years. He has little, if any, asthenopia or headache.
43	58	M.		Sick-headaches (very violent). Asthenopia.	Since youth. do.	Phthisis common on paternal side; also rheumatism.	R. + 2.25^s + 1.50^c L. + 1.25^s + 0.50^c	Exophoria, 19°. Left hyperphoria, 4°.	Given for constant wear: O. D. + 2.25^s = + 1.50^c O. S. + 1.25^s = + 0.50^c Graduated tenotomies of both externi and right inferior rectus.	This patient's age was against him. His refractive conditions were unlike and hard to perfectly correct. He reports a very marked decrease of headache and asthenopia. He is still under my observation.
44	41	M.	Married.	Headache. Insomnia. Morbid feelings with delusions. Melancholia with suicidal tendency.	Since 20th year. 2 years. do. do.	Father died of tumor. Mother is a chronic invalid. Sister has slight hysteria. Paternal grandmother died of phthisis. One paternal uncle a suicide. One aunt was insane.	R. − 3.50^s − 1.00^c L. − 3.50^s − 1.00^c	Exophoria, 2°. Right hyperphoria, 2°.	Given for constant wear: − 3.50^s = 1.00^c O. D, − 3.50^s = 1.00^c O. S. Graduated tenotomies of right external and left inferior recti.	Complete restoration to health. No return of symptoms for past two years.
45	40	M.	Married.	Neuralgia. Sense of pressure in the head. Vertigo. Morbid fears. Insomnia.	Several years. do. do. do. do.	Two second-cousins insane.	R. + 1.00^s L. + 1.00^s	Esophoria, 10°.	Graduated tenotomies of both interni.	Patient promised to return for further observation, but has not yet done so. The last report was one of marked improvement.
46	19	F.	Single.	Headaches (severe and constant). Convulsions of the epileptic type. "Fainting attacks." Nervous prostration.	3 months. When a child. During past 6 mos. 6 months ago.	Mother is very nervous.	R. + 5.50^s L. + 3.00^s	Exophoria, 8°.	Given for constant wear: O. D. + 3.50^s O. S. + 1.50^s	Patient has worn the glasses for two years without a headache or convulsive seizure.

A Tabulated Record of Fifty Consecutive Cases of Headache and Neuralgia treated exclusively by the Correction of Eye-strain.—Continued.

Case.	Age.	Sex.	Condition.	Symptoms.	Duration.	Heredity.	Visual tests. Refraction.	Visual tests. Muscular.	Treatment.	Remarks on Case.
47	47	M.	Married.	Sick-headaches. Watering of the eyes in cold weather. Asthenopia.	Since 16th year. 3 years. do.	Mother died of schirrus; father of prostatic trouble. Brother died of phthisis.	R. + 0.75^s L. + 0.50^s	Right hyperphoria, 1°. Exophoria, 1°.	Graduated tenotomy of right superior rectus.	Patient left for his home in California. He reports a very decided relief from headache and asthenopia.
48	33	F.	Married.	Sick-headaches. Asthenopia. Constipation.	Since 8th year. 10 years. do.	Mother, maternal grandmother, one maternal aunt, one maternal uncle, one brother, and one sister died of phthisis.	R. + 3.00^s L. + 3.00^s	Esophoria, 15°. Left hyperphoria, 1°.	Given for constant wear: + 2.00^s	Patient has been benefited by glasses ordered. Her husband refused consent to an operation for the muscular maladjustment.
49	32	M.	Single.	Headaches.	Since childhood.	Father has severe headaches. Mother died of puerperal fever. One brother has headaches.	R. − 0.50^c L. − 0.25^s	Esophoria, 8°. Left hyperphoria.	Given for constant wear: O.D. 1° prism, base up. O. S. 3° prism, base out.	No report has ever been received from this patient. He lives in the West and has not returned for further treatment.
50	40	F.	Married.	Neuralgic headaches (causing coma of 24 hours' duration).	Since 14th year.	Father died of paralysis. Mother had "suffocation spells." One sister is very nervous. Dyspepsia is a family trait.	R. − 2.50^s + 0.75^c L. − 2.50^s + 1.50^c	Left hyperphoria, 6°.	Given for constant wear: − 2.50^s = + 0.75^c O. D, − 2.50 = + 1.50^c O. S. Graduated tenotomies of left superior and right inferior recti.	Total cessation of headache for a long period of time. Occasional headaches (according to last report) after severe exertion or excitement.

I can point to case after case in my professional experience, since my own recovery, where the cause of neuralgic attacks, excruciating headache, vomiting, extreme nervousness, and many other symptoms (not apparently connected with eye-defect) would have remained unrecognized if atropine had not been employed.

There is a rule given by most oculists, viz., to give to a hyperopic patient the strongest convex glass[1] with which he can comfortably read the normal test-type (XX) at a distance of twenty feet. It is impossible in many cases to decide this fact without atropine or an ophthalmoscope. The former method is the best one, because the accommodation of the oculist, as well as that of the patient, has to be excluded in the latter, and it has the advantage that it can be employed by the general practitioner as well as by the specialist.

It is advisable to caution the patient, after using this drug, that he may possibly suffer from the sunlight, and that colored glasses will relieve him of this annoyance. It is also best to tell him that his vision may become very blurred for distant objects in case he is far-sighted; and that, in any case, he will be unable to read or to write by the aid of vision without glasses for several days.

I have known hyperopic patients to become greatly alarmed at the rapid loss of vision which has followed the use of atropine; all of which could easily have been avoided had they been prepared for it by timely words of explanation. It is always well to explain to far-sighted subjects the difference between "manifest" and "latent" hyperopia, and to make them intelligent as regards the effect of atropine upon the "focussing" muscle before you administer it. If they are forced by their business to use their eyes for near-work while under the influence of atropine, a pair of cheap glasses may be given them for temporary use while under its influence.

I cannot impress too strongly upon my readers the necessity of using atropine upon a patient (if young) for diagnostic purposes when an error of refraction or of accommodation is suspected. Personally, I do not regard an examination as complete without it. It solves the question of the presence of "latent" hyperopia—a very common defect, and possibly a very serious one (from the stand-point of the neurologist) if allowed to go unrecognized. It reveals the existence of a previous ciliary spasm. It often arrests headache as if by a magic touch, and solves the nervous origin of many other similar symptoms.

Patients who boast of their acuteness of vision, and who apparently justify their statement by reading test-type at a distance without the aid of glasses, are often astonished, and sometimes alarmed, at the immediate loss of this power which is brought about by the use of atropine. This surprise is heightened when (by the use of proper lenses) their power of vision for distance is immediately restored, and they become conscious for the first time of the muscular effort which they have been compelled in the past to exert in order to see without them. I shall never forget, personally, the sensation which I experienced of "seeing without effort" when latent hyperopia was discovered in my own eye, and corrected by glasses.

These experiences are well-known facts among oculists, but to the profession at large they often occasion as much of a surprise as to the patient.

I usually employ a solution of four grains of sulphate of atropine to an ounce of distilled water. This can be kept constantly in your office in a phial with a rubber-top dropper substituted in place of a cork A drop or two in each eye will suffice, in most subjects, to dilate the pupil widely, and to paralyze the power of accommodation of vision for near objects in about three hours. In occasional instances it became necessary to keep the patient under its influence for several days, but this is not the rule.

In this contribution it is my purpose to present, as a supplement to others previously published by myself, a report of fifty consecutive cases of typical headache and neuralgia, taken from my private case-book, as confirmatory of the views that are here advocated.

Space will not allow of the full records of all of these cases. I have concluded, therefore, to tabulate the main points of each case,[1] and to give histories of those only that presented some particular difficulties either in diagnosis or treatment. These will be numbered so as to correspond to the table. In such a tabulated record it is impossible to show many fluctuations observed in the muscular tests during treatment.[2]

[1] The advisability of a full correction by glasses, of existing hyperopia can only be decided after the condition of the patient, his age, his susceptibility to reflex irritation from eye-strain, etc., have been carefully considered. It is not usually advisable to force a young subject to wear a glass which fully corrects the latent hyperopia.

[1] The terms used in this table are those first suggested by Dr. G. T. Stevens, of New York (New York Medical Journal, December 4, 1886):

"*Esophoria*" signifies a deviating tendency of the eyes inward; "*exophoria*," a similar tendency outward; "*hyperphoria*," a similar tendency of either eye upward.

In the table appended to this article I have noted the refraction only as observed when the eyes were under atropine.

[2] Every patient examined for defective equilibrium in the eye-muscles instinctively strives (not by mere volition) to get binocular vision

CASE III.—This case is one of special interest. Both the patient and her sister had been delicate for many years. The patient had never menstruated; had been addicted to "fainting-spells" which occurred frequently, and at the most inopportune times, so that she would fall unconscious in the street, etc.; had suffered from melancholia, so that once she attempted suicide; had been a victim to nervous dyspepsia; and had suffered more or less from asthenopia.

Her family history was a bad one, showing a marked heredity to nervous derangements. The mother had the same "fainting-spells;" the maternal uncles all died of diabetes; one cousin of the patient has epilepsy; and two other cases of epilepsy existed in her paternal ancestry.

The eye-tests showed unequal refraction in the eyes; the right eye showed a decided tendency to assume a higher plane than the left, although she could fuse her visual images, even with a red glass before either eye.

As she was unable to desist, for a time, from an occupation demanding use of the eyes at the near point, the manifest hyperphoria was corrected (within one degree) by a prism. The effect of the prism has thus far been very beneficial. Later on, it is my intention to perform a graduated tenotomy for the purpose of bringing the eyes to a proper adjustment.

That this defect in the vertical movements of the eyes is a congenital one, I have had an opportunity of quite positively demonstrating by similar examinations made upon others of her immediate family.

The so-called "fainting-spells," to which this patient was subject, are probably closely allied to epilepsy, a disease to which she is liable by heredity. It is not common for faintness to prostrate people suddenly while crossing a street (without apparent cause or warning), and to be associated with a total loss of consciousness for quite a prolonged interval.

CASE IV.—This patient presents a peculiar heredity to nervous derangements. Insanity, epilepsy, and headaches have been developed in the ancestral lines. The patient has had attacks of marked "petit-mal," in which consciousness would be suddenly lost for intervals of from five to fifteen minutes. His eyes began to cause him distress about two years before I saw him.

His mental faculties had at times been rendered peculiarly sluggish, so that the patient felt unable to handle complex business problems.

CASE V.—This case presents a peculiar instance of marked relief from a prostatic neuralgia (which bids fair to entirely disappear without local treatment) after the cessation of "eye-strain." Headache and sleeplessness also existed as sources of great distress.

I have previously reported a remarkable case of this type of neuralgia (*New York Medical Journal*, January 7, 1888), which bears upon the correction of an eye-defect to such an extent that I quote it in full, as follows:

"*Melancholia, Morbid Impulses, Cerebral Confusion and Distress, and an Intractable Prostatic Neuralgia.*—Male, aged twenty-three, unmarried.

"Family History: The mother of the patient suffers from neuralgia and headache. The paternal grandfather had paralysis. The paternal grandmother was 'extremely delicate.' One brother suffers from headaches. Another brother is very excitable and of a highly nervous temperament. No case of consumption has ever occurred in any branch of the family.

"Eye-defects: Hyperopia (latent) of 2.50 D. Esophoria (manifest) 4°; subsequently 12° were elicited prior to any operative procedure.

"This patient had been under medical care for many months for a prostatic neuralgia, and had derived no benefit from local or general treatment. He developed melancholia, and would frequently retrace his steps for several blocks, during a stroll, in order to touch some object which he felt he should have touched when he passed it. The use of his eyes intensified his mental symptoms markedly. He also suffered from morbid fears. He had never had venereal disease. After partial tenotomies were performed upon his interni, and his hypermetropia was corrected by + 1.50 spherical glasses, his recovery was very rapid and complete. He has had no abnormal mental symptoms or neuralgia of his prostate since the first operation (now nearly two years). His father, one brother, and a sister have since been examined by me, and all had very marked eye-defect."

I have, at the present time, a third case under my care which I think belongs to the same class of reflex neuralgias.

In every one of these three cases the relationship between eye-strain and the prostatic neuralgia had never been suggested to the patient by any of their numerous medical advisers or by their eye-symptoms. All had tried local treatment, directed to the prostate gland, without satisfactory results, under skilful and experienced hands.

CASES VI and VII.—These were typical cases of severe paroxysmal pain, in which very gratifying results were quickly obtained by a graduated tenotomy of one muscle. Both had tried drugs without benefit.

CASE VIII.—This patient (the wife of a prominent divine) was sent to me from a distant city as an "incurable case of sick-headache." The attacks had recurred so frequently and with such severity as to practically unfit the patient for many years for any social or household duties. All medicinal treatment had proved of no avail. No trouble had ever been experienced with the eyes, as far as the patient could recall.

Under atropine an astigmatism (+ 1.00°) was discovered and corrected by cylindrical glasses. She also manifested within a week nearly 6° of right hyperphoria, and an esophoria which fluctuated from 2° to 8°. Prisms of 5° (in total) for her hyperphoria were worn by her over her cylinders for more than three weeks, during which time her customary headaches failed to appear, and her apparent esophoria was favorably modified.

The vertical deflection was then corrected by a graduated tenotomy of the left inferior rectus.

A report received to-day from the son of this patient states that "mother is almost entirely free from pain and has had no attack of sick-headache for many weeks." The physical condition of this patient has improved to such an extent as to render her capable of daily feats of exertion that had heretofore been deemed impossible.

CASE IX.—This lady was sent to me by an oculist of prominence in the West, because he could not interpret to his satisfaction certain points of apparent conflict in the tests relating to muscular equilibrium in the orbits, nor could he cure her severe asthenopia and intractable neuralgia by any form of glass.

On the first examination any attempts to measure the sursumduction, adduction, or abduction of the eyes caused the most extreme faintness and nausea, so much so that they had to be desisted from at that time. The patient disclosed, however, after some days of careful observation, a high degree of hyperphoria, with esophoria of 14° (causing homonymous diplopia with a red glass).

The correction of her astigmatism by glasses, and the relief of the abnormal muscular tension in the orbits by graduated tenotomies on three muscles has greatly improved her condition; but I am inclined to doubt if her deviating tendencies in the orbit have yet been completely rectified.

Her neuralgia and headaches have been lessened in frequency and severity at least one-half, and her asthenopia was decidedly diminished when she last wrote me.

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under the nearest approach to physiological conditions of which he is capable.

We are forced to admit, therefore, that what we detect in any patient and record as an error is in reality only what the patient cannot conceal, not necessarily all the defect in the muscular adjustment that actually exists.

Because a patient can momentarily perform a feat of eye-balance which approaches the normal state, by the aid of his reserve power, it is by no means proved that the eyes are habitually in equilibrium.

Unfortunately she is forced to use her eyes constantly at the near point.

CASE X.—This patient was sent to me from a distance by her physician for relief from terrible sick-headaches that occurred once or twice each week. She also was unable to use her eyes for reading, sewing, or any prolonged effort without a severe headache occurring within twenty-four hours. She had been confined in bed for months, at one time, from an attack of "nervous prostration."

She disclosed a high degree of hyperphoria and esophoria. These abnormal conditions seem at the present time to have been satisfactorily rectified by three graduated tenotomies.

In one of her last communications to me she says: "To say that I feel better would be expressing it in very mild language. I feel perfectly lovely, and can stand almost anything."

CASE XI.—In the ocular conditions of this patient a most complex anomaly of adjustment of the eye-muscles was encountered. The heredity of the patient was a particularly bad one. Phthisis and epilepsy had developed in both the maternal and paternal ancestral lines, and one brother had developed epilepsy (with attacks closely bordering upon insanity) before the age of ten years.

Repeated graduated tenotomies have thus far been performed upon the eye-muscles with happy results both as to the expression of the eyes and the frequency of headache; but the results are not yet what I believe they will be, when the conditions encountered are perfectly rectified. Such conditions as were observed in this case require time, patient observation, and extreme care in treatment.

CASES XII., XIII., and XIV.—These were simple cases to diagnose and combat. Neither of them have yet passed from under my observation. All were treated by me by graduated tenotomies of the eye-muscles for some manifest anomaly. The improvement noted in all has been gratifying to the patient as well as to myself.

CASE XV.—This young lady was sent to me by a prominent New York surgeon, under whose care she had been, and at whose advice a plaster-jacket had been worn continuously for a year with the hope of controlling a constant pain in the spine between the shoulders and in the lumbar region. She had also been under the care of one of the leading New York gynecologists, who had helped her somewhat she thought, but had not relieved her head or spine. Her physical condition was one of extreme and progressive debility. Over two weeks elapsed before she could endure a carriage-ride to my office, after a letter of introduction had been given her, although she was living but a short distance from it, and the weather was favorable. She had, when I first saw her, constant headache and spinal pain; was unable to read, write, or sew, and could sleep only a small part of each night. The condition of her eyes proved to be a very complex and difficult problem to solve and rectify. She disclosed, after patient observation, a high degree of hyperphoria (almost totally latent) and also a homonymous diplopia (when a red glass was placed before either eye). Repeated graduated-tenotomies were performed upon the eye-muscles within a period of three months, when she returned to her home in a Southern State. Before she left New York she was walking about three miles each day; had experienced a great relief from her headache and spinal pain, and was better than she had been for many years. In one of her written communications lately received she says: "I am sleeping better and the pain between my shoulders is decidedly better. I have less pain in the back of my head. I drive, walk, entertain company, and go to church every pleasant day, so I know I must have gained in strength even since you last saw me." This case very closely resembles one reported by me in the *New York Medical Journal* January, 7 and 14, 1888, which will bear repetition here. My record of this case is as follows:

"*Cerebral Neurasthenia, Constant Pain in the Head of Five Years' Duration, Asthenopia*, etc.—Female, unmarried, aged twenty-one years.

"Family History: Maternal aunt and five paternal relatives died of phthisis; two cousins had chronic chorea.

"Eye-defects: Patient had hyperopia (latent) of 1.25 D., and exophoria (manifest) of 2°. A latent hyperphoria of 2° was subsequently discovered.

"This young lady was brought into my office by two assistants, who were obliged to carry her from the carriage. For several years she had been carried daily from her room to the library of her father's house, and, after reclining in a chair for a few hours, she would again be carried to her bedroom. She could manage with difficulty to walk slowly across a room. She had not been able to write, read, sew, or see her most intimate friends for five years on account of a constant pain in her head, which was rendered intolerable by any use of the eyes or excitement. Her symptoms began while at boarding-school, from which she was removed to her home in a recumbent posture and by easy stages.

"I used static electricity upon this patient for some weeks with a slight improvement in her power of walking, but no relief to her head. I then persuaded her to consent to a relief (by partial tenotomies) of her abnormal eye-tension. Tenotomies were then performed upon her left superior rectus and both externi within the space of two weeks. From that date her improvement was very rapid. She was sent home a few weeks later practically cured."

A letter from her physician, lately received by me, says:

"Your patient is the wonder of this region. She rivals the 'Jersey Lily' in her feats of walking."

Before this patient was sent home she ascended and descended five flights of stairs daily, and averaged over a mile's walk each day without a companion to assist her.

I would add to this record that this patient lately called at my office and informed me that she was studying physical culture, with a view of teaching it.

CASE XVI.—This case is one of the most puzzling problems that I have yet encountered. The patient is a young lady who has suffered from a constant pain over the eyes that nothing would relieve. She had been under the best medical care, and had consulted a very prominent oculist, who advised "a weak reading-glass." Her pain still remained unabated. For a long time after I had the opportunity of testing her eyes she failed to disclose a left hyperphoria, which her expression justified me in suspecting. Prisms were worn by the patient for this defect as fast as she revealed it (always keeping about one degree behind what the patient disclosed), until a total of nearly eight degrees of hyperphoria was revealed by the patient. Two graduated tenotomies were performed to correct this deflection (the left superior and the right inferior muscles being button-holed). Both muscles were found to be enormously hypertrophied. The tendons were as thick as heavy buckskin. Subsequently both of the externi were operated on for an exophoria that had always manifested itself. The results thus far have been that the patient is greatly relieved from her headache, but is not absolutely cured. Her muscular balances seem to be nearly perfect.

CASE XXI.—This case has not progressed as well as I at first anticipated it would. The patient's eye-tests at the first interview led me to hope for marked and immediate benefit, but the results thus far are not as rapid as I expected. The patient was obliged to return to her home in the western part of this State, and I placed her under the care of an oculist who is quite well versed in the treatment of mal-adjustments of the eye-muscles. Before she left New York I had reason to suspect the existence of a latent hyperphoria. It is probable that further observation and time will reveal some vertical tension in the orbit.

CASE XXIII.—This girl weighed, when I first saw her, but ninety-two pounds, although five feet five inches in height. She was in a nervous condition that justified alarm, as morbid fears and emotional disturbances were becoming very pronounced. Her headaches were peculiarly distressing and very frequent. She had been under the care of several prominent physicians, and one oculist of note. A weak cylinder had been prescribed for the right eye, to be used while reading or sewing. A latent hyperphoria of 4° and an exophoria of 5° were corrected by three graduated tenotomies. She is now better in health than for many years past, and has gained some ten pounds in weight.

CASE XXIV.—This patient is a physician. Since childhood he has had a peculiarly "weak stomach," and neuralgic headaches of a severe type. Without a known exception his maternal ancestry for several generations have been similarly affected. His mother and one brother died of brain disease. Two sisters are victims to excruciating headaches. His father and paternal ancestry suffered more or less from sick-headaches. Within the past fifteen years the patient has had frequent attacks of vertigo, and more or less "confusion of thought" at times. Insomnia has also become almost a habit. The beneficial results of eye-treatment have been very marked in this case. He had esophoria of a high degree, and some left hyperphoria, to relieve which I performed three graduated tenotomies. The last reports from this patient would indicate that he is in better health than at any previous period. He expresses himself as particularly grateful for the improvement in his headaches, digestion, and ability to sleep. He can now read, travel in the cars, and do gynecological work without distress in his head; all of which used to be particularly difficult for him to attend to without entailed suffering.

CASE XXV.—This is particularly of interest from the fact that the patient had been afflicted for six years with very frequent paroxysms of neuralgia over the eyes, of an excruciating type, accompanied by vomiting, that were apparently due to diabetes. Dr. George T. Elliott, of New York, examined the urine several times while the case was under treatment, and noted a steady decrease in the percentage of sugar, without the aid of drugs or restricted diet—from three per cent. to one-third of one per cent. The patient showed a high degree of left hyperphoria and esophoria. Graduated tenotomies were performed for the relief of the hyperphoria only, and for quite a long time all the neuralgic paroxysms ceased, and the improvement in the patient's condition was very marked. Unfortunately, the patient has thus far failed to allow me to complete the restoration of the other deviating tendency. I have received a letter from him lately in which he states that he has discontinued glasses, and that his headaches have returned. I have advised him to return to New York and complete the line of treatment commenced. His urine has been repeatedly tested by his physician, and he has found no trace of sugar at any time.

CASE XXVII.—All efforts made thus far to relieve this patient of headaches have proven of no avail. No evidence of any organic disease has been detected by any of the physicians who have had him under their care. The heredity of the patient was bad, and justified me in hoping for better results. Phthisis was common in the paternal line. The mother had hemiplegia. A sister (now under my care) has very severe attacks of catalepsy and hystero-epilepsy. Twice in her life she has been supposed to be dead, laid out for burial, and the clothing prepared. This case was under the care of Dr. C. L. Dana, of New York, for quite a long time. He obtained negative results from electrical treatment and drugs. At my suggestion (when the apparent eye-defects had been quite satisfactorily overcome without any decided benefits) this patient placed himself under the care of Dr. J. W. Wright, of this city, for the relief of an anal fissure and hemorrhoids. No marked change in the headaches followed the removal of this source of reflex irritation. As he also had a very marked deflection of the nasal septum, I advised him then to have that corrected. This step was undertaken, with admirable success, by Dr. D. Bryson Delavan, of New York, who removed quite a large piece of the septum. Thus far all these steps have proved of no material benefit as regards the headache, of which the patient still complains. I encountered a case exactly similar to this, some two years ago, which was sent to me from San Francisco. In both cases little material benefit was obtained. It is still possible that some latent cause for eye-strain may be detected by further observation.

CASE XXIX.—This patient had been under constant medical supervision for years. Had made a trip for several months on the ocean, to fit him for work; but had collapsed again as soon as he began his eye-work in the office. Riding for a short time in a railway car (if he read or looked out of the window) would give him indescribable distress in his head, and compel him to go to bed. His family history shows the existence of phthisis, extreme neurasthenia, and severe headaches. A tendency toward melancholia in his ancestral lines has manifested itself in several instances. His brother has always suffered with headaches, and has been "weak-minded," so that he was unable to fill clerical positions with satisfaction to his employers for any length of time. Correction of a hyperphoria and a very high degree of esophoria by graduated tenotomies has effected in this patient a complete restoration to health.

CASE XXX.—This lady was sent to me by her physician because "he could find nothing to relieve her." Her headaches, although extremely violent at times, never entirely subsided. Transient attacks of numbness of the face, lips, and limbs would occur at intervals. She showed both hyperphoria and esophoria. These were corrected by graduated tenotomies. Some eleven months have now elapsed since the operation. Her headaches rarely occur, her physical strength has improved wonderfully, and she regards herself as practically cured.

CASE XXXI.—This patient had been a source of anxiety to his parents from childhood on account of delicate health and nervous debility. Since manhood, he had sought constantly for relief. "Nervous dyspepsia" had existed since early boyhood. Since the seventeenth year, supraorbital neuralgia has proved a source of almost constant distress. For over six months he was lately under the care of a prominent oculist, who ordered different reading-glasses from time to time, that failed to afford relief. He was then treated for nasal occlusion by chromic acid applications, but no benefit was experienced. He had, at times, been under the medicinal treatment of many of the leading physicians, but had obtained no permanent relief from drugs, and had become very despondent in consequence. His mother and sister have neuralgia; the latter, of a very severe and intractable form. His father is very nervous, and suffered from asthenopia until I corrected his refractive errors. In a letter lately received by me from the patient, he says: "Our benefactors are seldom remembered until a punching is received. I have been feeling so well that I've not thought of how I got there, nor the cost, until your bill came."

CASE XXXII.—This patient was a doctor. His hypermetropia was totally latent, and was disclosed only after the use of atropine. The correction of his muscular and refractive anomalies caused a most favorable change.

CASE XXXIII.—This case is well worthy of record. The patient was a poor factory girl that was sent to me by a medical friend in Massachusetts, to see if anything could be done for her, as no one who had seen her could make a diagnosis. Her appearance was one of remarkable deformity. Her chin seemed to be held firmly in the region of the fourth button of her dress. Both upper limbs were contractured in the state of semiflexion at elbows, wrists, and fingers, and trembled excessively when she tried to use them. They could not be extended, nor could the patient make much use of the hands. She had been

obliged to give up work on that account. When she talked, her face became painfully drawn and distorted. The mouth would especially be drawn downward. Under the least excitement she would be seized with what she called "choking spells." The throat muscles would contract and interfere seriously with respiration. She had constant headache—chiefly in the forehead and occiput—and a persistent pain in the neck. No painful points existed; nor did pressure, movement, or other tests reveal the existence of organic disease of the spinal cord. Sensibility to touch, pain, and temperature was normal. Motility was unimpaired. The muscular sense was perfect. No inco-ordination existed. Several photographs of this patient were taken at my request, but they failed to give an idea of the frightful contortions of the face and upper limbs that existed when the patient was unduly excited. I considered the case as one of aggravated chorea, complicated by headache and asthenopia. An examination of the eyes showed a manifest hypermetropia (+ 0.75 D.) which remained unchanged under atropine. She also showed a slight esophoria (which under prisms became a homonymous diplopia) and a left hyperphoria of 3°. These muscular anomalies were satisfactorily relieved by several graduated tenotomies, and applications of static sparks were made daily for about two months. The patient has now regained the use of both hands, carries her head erect, has no headaches, and little spinal pain, and for a while returned to work. The effect of hard labor brought back her "choking spells;" hence she was advised to take a year of absolute rest. She now has some asthenopia remaining, and an occasional headache. Her facial contortions persist to a slight extent when she is unduly excited. I suspect that some latent hyperphoria exists still, and that further operative work on the eye-muscles will be demanded before the patient recovers completely.

Case XXXVI.—This case illustrates the dependence of neurasthenia upon eye-strain. The symptoms which coexisted with headache entirely disappeared when the cause of excessive nervous expenditure was removed. A more pitiable nervous wreck than this patient was when sent to me is seldom encountered.

Case XXXVII.—This was a simple case of "eye-strain," due to a refractive and muscular error combined. The restoration to health seems to be complete. The headaches had become practically uninterrupted, and unfitted the patient for any occupation.

Case XXXVIII.—This case is one of peculiar interest because of the life-long duration of the symptoms and the various steps which had been taken to get relief. The patient was the wife of a physician, who had been obliged to abandon a lucrative practice in Chicago on account of his wife's health. She had been delicate from childhood, and eventually succumbed to constant headache, neuralgic paroxysms, failure of the digestive functions, and insomnia. She also developed tremor, hyperæsthesia of the entire body, emotional disturbances, and other symptoms of "nervous prostration." Her womb was supposed to be at fault, and all her other symptoms were deemed as echoes from pelvic disturbances. For fifteen years she had been under the best medical advice (chiefly gynecological) in the various cities in which they had at times taken up their residence. The heredity was a bad one. Almost all of the ancestors and relatives (male and female), on both sides, had given evidence of nervous troubles. The menopause had been confidently waited for as the millennium in which the supposed ovarian disturbance would cease; but the hope had proved a delusive one, as no improvement seemed to come. There had never been, until after the menopause, any trouble with the eyes, of which the patient was conscious, in spite of the fact that the cause of her nervous disturbances had without doubt been chiefly ocular throughout her life of suffering. She had reached a point, before I saw her, where seclusion from the society of friends and confinement to her own room had become a necessity. The headaches were intolerable; the use of the eyes a source of discomfort; and the physical weakness extreme. When I first saw her she was brought to my office in a carriage. Within three weeks two graduated tenotomies had been performed upon her eye-muscles. She attended a place of amusement soon after the first operation, which gave her great relief. In less than two months she undertook the care of a home of her own in Brooklyn, and visited me daily at my office for some time. She has had but little headache since the operative treatment upon her eye-muscles was begun. She still suffers, however, from acute digestive disturbances at times, which retard her recovery. At the last examination I discovered some hyperphoria which had not been relieved. This factor may be an active one in causing her gastric derangement.

Case XXXIX.—Although in this case a complete cessation of headaches for six months followed the use of prismatic glasses, the parents refused to allow the use of atropine and a radical correction of the hyperphoria and esophoria. As the patient lives at a distance from New York I have no record of her present muscular tests.

Case XL.—This patient had one eye that was too defective to be of much use. Her tests were very unsatisfactory in consequence, and little encouragement was given her. Her ocular conditions were unquestionably a very important factor in her nervous debility.

Case XLI.—This patient was a divine, and a victim to chronic sick headache, asthenopia, insomnia, and general neurasthenia. He had been obliged to desist from pastoral work in consequence of his many sufferings. At the last interview he told me that he had recovered so rapidly that he had resumed pastoral work, and now suffered but little from his old symptoms. Too close application in his study tends to cause him a slight return of distress in his head and eyes. He no longer has any double vision.

Case XLIII.—This case was a long and tedious one, and the results are, perhaps, all I am justified in expecting. I had to combat a high degree of astigmatism for the right eye, unequal refraction in both eyes, crossed diplopia (transient), and left hyperphoria of a very high degree (mostly latent). In spite of the difficulties of the case, and the amount of operative work done upon his eyes, this patient is one of my warmest and most enthusiastic advocates. He certainly has been greatly relieved of most excruciating attacks of headache, which were becoming almost incessant. His asthenopia is also greatly improved. He is still under observation with a hope of greater benefits.

Case XLIV.—This case was one of unusual interest to me. The patient had succumbed to headache, insomnia, etc., and had had an attack of the so-called "nervous prostration," which compelled him to abandon all business pursuits and take a trip to Europe, which he could ill afford. This trip gave no permanent benefit, and melancholia with suicidal tendencies developed after his return. No medicinal treatment yielded any results. He was then referred to me by his brother (a physician of prominence in this city). Graduated tenotomies were performed for esophoria and hyperphoria. The effect was immediate and startling to his family. He completely regained his health, strength, and mental vigor within six weeks. Over two years have elapsed without any signs of return of his old symptoms. Moreover, he has passed through a serious financial disaster with a buoyancy that surprised himself and others.

Case XLVI.—This case illustrates in a remarkable way a high degree of latent hypermetropia. Spherical glasses in this case have entirely arrested the headaches and convulsive attacks (to which the patient was subject) for two years.

Case XLVII.—This patient was a physician. He reports that very marked improvement, not only in his headaches and asthenopia, but in his general health, has followed the relief of his eye-strain.

CASE L.—The final case reported is one of the most remarkable that I have ever encountered. The patient was brought to my office from her home in Virginia by her sister, who wrote to me as follows, before her arrival:

"My sister at one time thought her headaches came from her teeth; and she had twenty-six drawn. This may give you some idea how tremendously in earnest she is about being cured."

When a child, headaches would appear after a transient attack of blindness. They increased in frequency so that, after marriage, two a week often occurred (each lasting twenty-four hours and followed by two days of confinement in bed from exhaustion). When pregnant, she had several "falling fits" daily, and remained totally unconscious for some time. She seldom passed a week without being unconscious or semi-comatose from pain. The slightest exertion caused "palpitation of the heart" to such an extent as to cause a fear of approaching death. A correction of the hyperphoria by graduated tenotomies caused almost complete restoration of health.

The patient reports that during the past six months "she has had but three headaches—two light and one severe—the latter being caused by intense emotional excitement." I learn from her also that she can bear fatigue without any of the bad symptoms that used to inevitably follow. She was only under my observation a very short time; hence I suspect that the hyperphoria may yet be imperfectly corrected. Before she left New York she journeyed some fifteen miles daily to visit my office, and experienced no distress after the effort.

156 MADISON AVENUE.

ACUTE ŒDEMATOUS UVULITIS, WITH CASE.[1]

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MOST authors, in writing of acute œdema uvulæ, or acute uvulitis, affirm or infer that the œdema is caused by or associated with cold, and that the pharynx and tonsils will show a sympathy of congestion somewhat proportionate to that acutely present within the uvula.

Mackenzie[2] says: "Some cases where the pharynx is inflamed the violence of the morbid action appears to be expended on the uvula." Sajous[3] speaks only of relaxed throat and uvula, which may be caused by chronic catarrhal inflammation; and Heath,[4] of œdematous uvula due to inflammation, and commonly found in any acute inflammation of the throat. Ingals,[5] in his lectures on the throat, does not mention the subject. Browne,[6] of London, in his recent edition, writes to the point. He says: "The uvula becomes suddenly red, swollen, and infiltrated, with comparatively little hyperæmia of the neighboring parts." Cohen[7] notes that œdema uvulæ sometimes occurs during the progress of acute or chronic sore throat, and the organ may acquire the size of a large bean, or even that of a plum, and will provoke spasms of impending asphyxia.

The case in question seems to be a unique one, and a striking exception to the doctrine laid down by most of the authors consulted. Mr. M——, a patent attorney, aged forty, was, on the morning of April 14th, in perfect health and had never been treated for throat trouble. In the afternoon, which was clear and balmy, he experienced no symptoms of cold or catching cold. Later in the same evening his throat began gradually and steadily to fill up, and within four or five hours spams of suffocation attacked him. The patient described it as though his tonsils had fallen and were movable in the throat. He could not swallow anything solid, and liquids only with great difficulty. He had no fever, his tongue was moderately coated, and his daily regulations of life were and had been good. He had eaten a rather heavy dinner about eight o'clock, and had smoked and drank, but not to excess. It was not until near twelve at night that his throat commenced to feel uncomfortable, although for several hours previous he had experienced frequent and annoying eructations. Early the next morning he came to my office, asking to be seen immediately.

Inspection by aid of strong reflected light revealed a limited, but intense, palatine congestion, and an enormous œdematous uvula. The tonsils, palatine folds, and pharynx were not hyperæmic, and the patient complained of no pain on pressure externally against the tonsils, nor were they at all prominent to the touch. The uvula was fully the size of the thumb in thickness, and on inspiration and expiration would flap back and forth, sometimes lying as a great pendulous mass on the tongue, and then, on forcible inspiration, dropping deep in the fauces, setting up a succession of paroxysmal coughs.

With the aid of Ingals' dressing-forceps, I grasped the swollen uvula in expiration at its most pendulous portion, and made a number of stabs with the bistoury; but finding only little bleeding I used a large needle, held firmly within the needle-holder, thrusting the point many times deep into the tissues. The oozing of blood and serum was so little, and the swelling had diminished to such a slight degree that, after waiting some fifteen or twenty minutes more, I determined to try the effect of a strong solution of cocaine. I therefore painted the whole uvula with a fifteen per cent. solution, and made another application within ten minutes. The engorgement now commenced immediately to disappear, and was reduced considerably before the patient left the office, he expressing himself as feeling freer and more comfortable about the throat. I ordered a dose of Rochelle salts, a gargle of tannin, aconite, and rose-water; to use no warm drinks, and to take little or no food, and that of a liquid character.

The same day, six hours after, the patient returned to the office, expressed himself better, and on inspection I found the swelling had subsided fully one-half. Reapplied the solution of cocaine and continued liquid diet. Next day the uvula was almost normal in size; throat perfectly comfortable; patient discharged, cured.

I was led to the trial, in this affection, of cocaine, knowing full well its power of readily reducing the turgescent mucous membrane in acute affections of the nasal passages. Its use in acute œdematous uvulitis may have been specially recommended; if so, I have failed to find mention among the number of works I have consulted. Laffont,[1] of Paris, speaks of the local effect of cocaine in increasing the functional activity of the sympathetic nervous system, causing contraction of non-striated muscular fibres. Bosworth[2] claims that cocaine produces rigid contraction of unstriped muscular fibres, and that, topically applied, it will so constringe the blood-vessels of an acutely inflamed mucous membrane as to arrest the disease. Wood's[3] experience is that in some acute mucous inflammations the primary bleaching is permanent.

To explain this rapid and localized œdema, and equally rapid and permanent disappearance, I believe we must look to the vaso-motors as being greatly at fault. The uvula is in direct communication with the stomach, through the sympathetic system. Flint[4] says there can be no doubt that the sympathetic branches contain filaments capable of modifying the calibre of blood-vessels. We can trace the nervous origin by many routes; one among

[1] Read before the Medical Society of the District of Columbia, May 8, 1889.
[2] Mackenzie, M.: Pharynx, Larynx, and Trachea. New York, 1880.
[3] Sajous: Diseases of Nose and Throat. Philadelphia, 1886.
[4] Heath, C.: In Ashhurst's Encyclopædia of Surgery. New York, 1888.
[5] Ingals, F.: Diseases of Throat, Chest, and Nasal Cavities. New York, 1881.
[6] Browne, L.: Disease of Throat, 2d edition. Philadelphia, 1887.
[7] Cohen: Diseases of Throat and Nasal Passages.

[1] Compt. rend., Soc. de Biol., Paris, 1887, 8e s.
[2] New York Medical Record, November 15, 1884.
[3] Wood, H.: Therapeutics, its Principles and Practice, 7th edition. Philadelphia, 1888.
[4] Flint, A.: Human Physiology. New York, 1882.

them is through the descending palatine branches into Meckel's ganglion, thence to the sympathetic root, on to the carotid and gastric plexus. But the most direct and easily explainable route is by the afferent branches of the pneumogastric, joining with the filaments to the superior cervical ganglion, branches from which ganglion, forming a plexus on the external carotid artery, are distributed to the ramifications of this artery.

I regard this case as an illustration of a phenomenon acting reflexly through the sympathetic system, localized in its manifestation and operating from the stomach—a function not foreign to the sympathetic when we remember the important influence which the sympathetic always plays upon nutrition, calorification, and secretion.

The rapid course which this disease ran shows, first, how the stomach may reflexly and acutely act upon the upper air-passages; second, that by giving rest to the stomach and causing a depletion, local and general, we effected a termination of this disease as hastily as it was acutely manifested.

NEPHROPHTHISIS, WITH SWELLING OF THE URETER ON ONE SIDE.

A few Remarks on Palpation of the Ureters in the Female.

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Diseases of the bladder, the ureters, and the kidneys, in spite of the improved method of examining, not seldom lead the practitioner into doubt in deciding the seat of the lesion. Concerning the subjective symptoms, we cannot admit of any such as characteristic of pathological changes of a certain organ. Particularly, frequent and painful micturition, formerly considered as indicative of a diseased bladder, is just as frequently met with in cases of pyelitis and nephritis. Even the results derived from physical examination are not so devoid of objection as one might desire. This especially applies to the microscopical researches. While some authors claim it impossible to base a diagnosis upon the epithelia found in the urine, others feel justified to diagnosticate diseases of the bladder, the pelvis, and the kidney from the mere appearance of the different epithelia in the urine. In one point they seem to be not at variance—aside from the significance of the epithelium of the bladder—namely, with reference to the tile-shaped, caudated epithelia of the pelvis. But I cannot conceive why special stress is laid on the tile-shaped arrangement, inasmuch as I would not hesitate in pronouncing all the coherent epithelia equally arranged like tiles.

The shape and the relative size of the different epithelia is certainly of a greater value in trying to come to a conclusion.

The facilities of making a diagnosis as to disorders of the urinary organs are greater in the female. The catheterization, or temporary occlusion of the ureter, is applicable. Besides, after the dilatation of the urethra, the condition of the lining surface of the bladder can be directly made out with the finger, and many details can be disclosed by vaginal exploration. We are even able to palpate the ureter for a certain length of its course.

This could clearly be demonstrated in a patient who was for a long time suffering from pyuria, and whose clinical history I consider worth recording, because relatively early in the course of the disease a positive diagnosis could be arrived at by the finding of tubercle bacilli in the urine, and because the palpation of the thickened left ureter indicated the situation of the tubercular process on the same side.

Mrs. A——, aged fifty-three, felt—with the exception of an attack of pleurisy many years ago, from which she completely recovered—quite strong and healthy until her present ailments set in. She complained of a sharp, cutting pain on passing urine, and passed a small quantity of turbid urine at short intervals. The patient when I first saw her was still able to attend to her housework, although occasional fever and lack of appetite had already impaired her strength.

The physical examination revealed, in the left supraclavicular region, a slight dulness, diminished respiratory murmur, and a few râles. The thoracic organs showed no further abnormality. The liver and spleen were normal. On pressing the one hand beneath the free border of the ribs on the left side, and making counter-pressure with the other hand over the region of the kidney, posteriorly, letting the patient at the same time take a deep inspiration, I could easily feel a smooth, round, not fluctuating tumor. There was no dulness in the left hypochondriac region, since the tumor did not reach the anterior abdominal wall, but was covered by intestine. The dulness of the spleen could easily be made out, and thet umor was apparently from the left kidney. On the right side the lower portion of the enlarged right kidney could also be palpated. During this examination the patient felt no pain, and there was but little tenderness on pressure. The patient never complained of pain in the region of the kidney, but referred all her symptoms to the bladder. Palpation of the bladder through the abdominal wall was not painful, but on vaginal examination there was well-marked pain referable to the bladder—especially, the left side was very painful and thickened. Beginning at this thickening, the left ureter could be felt through the anterior and lateral wall of the vagina, for a distance of about an inch and a half, as a cord about the size of a goose-quill. On the right side the tenderness was trifling, there was no thickening, and the right ureter could be felt of normal size. The uterus was dextroverted, and showed nothing abnormal. Its appendages were healthy.

The daily quantity of urine was diminished, and its reaction was weakly acid. On some days the patient passed hardly three hundred cubic centimetres. The urine was cloudy, contained numerous caseous flakes, and on standing a sediment of white muco-pus separated. It contained a large quantity of albumin. On microscopic examination, the fresh urine contained numerous micro-organisms—partly bacilli, partly cocci—numerous pus-corpuscles, a few red blood-cells, fine granular, albuminous, and fatty detritus, much mucus, and epithelium from the bladder and pelvis. Besides these there were numerous hyaline casts. The surface of the urine on standing had a peculiar glittering and fatty appearance.

The lesion was undoubtedly a suppurative inflammation, involving the kidney, the pelvis, the ureter, and the left half of the posterior wall of the bladder. It was most probably on the left side, for this was indicated by the thickening of the left ureter and the left side of the posterior wall of the bladder.

The question now arose as to the cause of the suppurative inflammation, and whether the process had proceeded from the bladder to the kidney, or *vice versa*. Gonorrhœa or infection from a catheter could be excluded. No obstruction (stricture or caruncle of the urethra, stricture or tumor at junction of ureter and bladder) which might cause retention of urine and a subsequent suppurative inflammation could be demonstrated. The dextroversion of the uterus could hardly be the cause. A bending or compression of the ureter by changes in position of the uterus gives rise to hydronephrosis, the symptoms of which are different from those enumerated above. For a short time I thought of a calculus in the pelvis of the kidney, although no symptoms were present which could have justified this diagnosis in preference to that of a tumor or tuberculosis.

All diagnostic doubts whether it be an idiopathic abscess of the kidney, or a pyelitis calcarosa, or a malignant tumor or tuberculosis, were removed by the discovery of tubercle bacilli in the sediment of the urine. It was a

case of nephrophthisis with tubercular inflammation of the left ureter and wall of the bladder.

During the course of the disease moderate hæmaturia occurred on two occasions; besides this, there were all the symptoms which we are accustomed to find with phthisis—night-sweats, chills, fever, etc. The lesion of the lung, the cough, and the expectoration also became worse.

Repeated examinations showed an increase in the size of the tumor of the kidney, and an increased thickening of the left ureter, which could now be felt as a hard cord through the abdominal wall of the highly emaciated patient. The thickening on the left side of the posterior wall of the bladder had gradually spread to the right side. Obstinate diarrhœa finally terminated the sufferings, which lasted for one year and a half.

At the autopsy the lungs, kidneys, and intestines were examined. The lungs contained cheesy nodules, especially in the left upper lobe; but these were also found in the lower lobe, and in the right lung. In the lower portion of the small intestine, the solitary follicles and Peyer's patches were swollen and opaque; and scattered here and there were tubercular ulcers.

Of greatest interest were the kidneys; the principal changes were found in the pelvis and in the medulla of the kidney. The pelvis was dilated and contained cheesy nodules in its wall; on opening, a purulent fluid containing cheesy fragments escaped.

The tubercular process consisted principally in the formation of miliary tubercles, which coalesced more or less, and then had undergone cheesy degeneration without suppuration. The tubercular ulcers thus formed had, as a rule, infiltrated and ragged edges, and their bases were covered by a nodular, cheesy mass.

The larger part of the papillæ of the kidney was converted into a granular cheesy mass, while a large part of the medulla had also been involved in the process—a true phthisis renalis. Here and there larger or smaller portions of both pyramids and cortex were preserved, and, scattered in these, some few miliary tubercles could be detected. The portion of the kidney not destroyed by the tubercular process was in a state of fatty degeneration. Some portions had a peculiar lardaceous appearance and were more consistent; these gave amyloid reaction.

The left ureter was also involved in the process, and was at least three times as large as the right. Its mucous membrane had been converted into a granular surface, and was covered by a cheesy material. Small ulcers—broken-down nodules—could be seen in the fresh specimen, but these were especially well marked in the bladder. The bladder was thickened, principally on the left side, and was covered with nodules and ulcers. The ulcers arose in a similar manner to those in the bronchi and larynx. The infectious matter passing over the mucous membrane, infected it and produced the so-called lenticular ulcers. These were well marked in the fresh specimen. The lenticular ulcers were surrounded by a hyperæmic infiltrated area, and their base was in a condition of cheesy degeneration. They were chiefly situated in those places over which the urine passes, that is, in the base of the bladder, from the opening of the ureter to the commencement of the urethra. The tubercular process had advanced to the right side, and almost included the orifice of the right ureter. The right ureter and kidney were, however, not involved. The right kidney was in a state of fatty degeneration, and gave amyloid reaction. It was larger than normal, and this was probably due to compensatory hypertrophy.

My idea of the process is, that it first involved the pelvis or papillæ of the kidney, and then advanced downward to the bladder. The advance from the left to the right side of the bladder could be followed by repeated vaginal examination.

The question now arises, whether the tubercular inflammation of the kidney was primary, and secondarily affected the lungs, or *vice versa*. I believe that the kidney was secondarily affected from the lungs, owing to the fact that pleurisy had previously existed.

We distinguish a miliary tuberculosis of the kidney as an expression of a general miliary tuberculosis, and occasionally we find miliary tubercles in the kidney with pulmonary phthisis. These are emboli produced by tubercle bacilli, and are principally found in the cortex. They remain in the capillaries—preferably in the glomeruli. Differing from the disseminated tubercles in the cortex (which are always secondary), there also exists a primary tuberculosis, also called a local tuberculosis. This latter begins in the pelvis, calices, or papillæ of the kidney, and proceeds along the urinary passages, leading to nodule-formation and cheesy degeneration, and breaking down of the papillæ and medullary substance. This same form can, however, be produced in chronic pulmonary phthisis, probably by an embolus.

It would be a great error to suppose that the entrance of tubercle bacilli into the blood-current would always produce an acute miliary tuberculosis. This depends on the number of bacilli entering the blood, and on the power of resistance of the various organs. In secondary phthisis renalis we must suppose that the bacilli, instead of being deposited in the capillaries of the cortex, remain in the vessels of the pelvis, calices, or papillæ. It is a puzzling fact that in some instances of primary tuberculosis of the lungs, the secondary invasion of the kidneys takes place in the cortex; while in other instances the infectious material is deposited in the pelvis, or the papillæ. Most pathologists, so far as I know, attribute those secondary changes to embolism.

Another explanation, however, is probable. The bacilli may pass with the urine into the uriniferous tubules, and are then deposited from the urine on the walls of the tubules. In support of this latter supposition, we have analogies. In miliary tuberculosis we find tubercle bacilli in the urine. In experiments on animals, after injecting staphylococcus aureus into the veins, the same coccus is found in the urine. In ulcerative endocarditis the staphylococci are deposited from the blood on the valves. The valves must, however, have previously lost their endothelium. A denudation of epithelia of the uriniferous passages is doubtless a more frequent occurrence than is generally thought, as the urinary organs constitute the principal channels for eliminating deleterious and irritating material, ingested into, or formed in the body.

Since various authors[1] have drawn our attention to the possibility of palpating the ureters, I do not fail to examine my gynecological and pregnant patients on this point. In most cases—about eighty out of a hundred—one succeeds in palpating the one or the other ureter; most frequently the right, somewhat less frequently the left, and more seldom both at the same time. In pregnant women we can regularly feel one or the other, or sometimes both at the same time. The increased amount of blood and the increased succulence during pregnancy is naturally of great assistance in rendering the ureters more easily palpable. This also explains the reason why the ureters are more frequently palpated in multiparæ than in nulliparæ. A subinvolution of one or the other of the ureters seems to occur. Now and then patients come under my observation in whom there is a marked thickening of the ureter, and neither clinical history nor examination shows any disease of the urinary organs.

In palpating the ureters, I always prefer to place the patient on the back. The palpation is easy if the vagina is thin and flaccid. It is difficult or impossible if the vagina is tense and the tissue between the vagina and bladder highly developed.

The distance between the orifices of the ureters in the base of the bladder is one and a half inch, and about the same behind the opening of the urethra. The ureters then pass for about half an inch in the wall of the blad-

[1] Hegar: Kaltenbach's Operative Gynecology; Sänger: Arch. für Gynäkologie, xxix; H. Kelly: American Journal of Obstetrics, 1888.

der, upward and outward, reach the anterior vaginal wall near the os externum, and then pass upward and backward and outward into the base of the broad ligament. Here they pass behind and below the uterine artery, about midway between the pelvic wall and the lateral union of the vagina with the uterus.[1]

That portion of the ureter passing from the base of the bladder to the broad ligament, and even a larger or smaller portion of its course in the broad ligament, can in most cases be palpated, either in part or for its entire length, provided we are careful to make no great pressure in palpating, but merely glide the examining finger gently from side to side along the anterior vaginal wall, and begin half an inch above the urethral orifice. The ureters can be felt as distinct and movable cords of about one-half the thickness of a goose-quill. Confusion with arteries and nerves, with muscular bundles of the levator ani or obturator internus, with inflammatory contractions of the parametrium, or with diseased and anteriorly displaced tubes, is possible, but can easily be avoided if we take the anatomical and clinical features into proper consideration.

The changes which occur in the ureters are principally of two kinds. There may be a simple dilatation or an inflammatory (tubercular, etc.) thickening. The ureter may simply become dilated. If this be the case and the dilated ureter can be felt through the vagina, then the obstruction can only be below the dilatation, and may be caused by caruncle of the urethra, strictures or new growths at the orifice of the ureter, or impacted calculi. Dilatation of the vaginal portion of the ureter is rare.

As a rule, the thickening of the ureter is due to an advancing inflammatory process or new growth.

What value has the discovery of thickened ureters as regards diagnosis? The value lies therein that a thickened ureter gives us a clue that an advancing pathological process—either travelling from the kidney to the bladder or the reverse—is present. That a thickened ureter may occasionally be present without changes in the urinary organs, I have mentioned above. Exceptionally, pathological processes may also occur in the neighborhood of the course of the ureters, pass to the walls of the latter, and thus lead to thickening. But these are exceptions, which do not upset the rule that ureteritis is never a primary disease, but is always secondary to inflammations (tubercular, etc.) of the bladder, pelvis, or kidney.

The primary diseases are: cystitis, pyelitis, pyelonephritis, hydronephrosis, pyelitis calcarosa, tuberculosis, and tumors.

The physician has, for example, made the diagnosis of cystitis from clinical observation. On vaginal examination he finds both ureters as distinctly marked swollen cords. He is warranted in concluding that the inflammatory process has travelled upward, probably on both sides. Furthermore, this condition is also of prognostic value, in so far as ascending pathological processes on both sides present a serious prospect. Or the physician finds only the one ureter swollen, while the other is either normal or cannot be palpated. That the process is an ascending one can be accepted with great probability. But to assume that it has only advanced upward on the side on which the thickened ureter is present is not justifiable. It is well known that inflammatory processes often attack neighboring organs, skipping the interjacent tissue, so that we may have a cystitis and pyelitis without any involvement of the ureters. Thickened ureters have, accordingly, as regard the diagnosis, only a relative value. Their presence justifies the conclusion of an advancing process; but their absence does not warrant its exclusion.

I have, up to the present, spoken only of thickening caused by ascending pathological processes. That suppurative processes in the kidney or the pelvis rapidly infect the ureters and bladder is evident, since the latter are constantly bathed with infectious germs. That this, however, is not regularly the case, and that pyelitis may exist for some time without implicating the bladder, has been demonstrated by autopsies. To mistake a pyelitis for cystitis, and treat it as such, is not of seldom occurrence in practice. The presence of a thickened ureter has the advantage to draw our attention not only to the bladder, but also to the entire urinary apparatus. If the thickening be limited to the one side, then we have a very valuable index in determining the side on which the inflammation exists.

Finally, I would mention the relation of parametritic exudations and indurations to the urinary troubles of women. These are frequently referred to the bladder, while the real cause is in the upper part of the ureter and in the pelvis of the kidney, where retention of urine and inflammation exist. Large parametritic exudations may surround the ureter and compress it; chronic parametritis which has led to induration and retraction is liable to distort or bend the ureter.

In patients suffering from acute or chronic parametritis, and complaining of urinary troubles, the possibility of compression or torsion of the ureter and of retention of urine, with its consequences, must always be borne in mind. That portion of the ureter below the exudation may be collapsed, and in comparison with that of the opposite side cannot be palpated. There is a case recorded in which the ureter, owing to abolition of its function, became obliterated. Generally, however, the closure of the ureter due to compression or bending is incomplete, and most frequently intermittent. To draw conclusions, as regards the condition of the pelvis and kidney on the diseased side, from the impossibility to palpate the portion of the ureter beneath an exudation, while the ureter on the healthy side can be palpated, I regard as theoretically interesting, but as practically of no value. In palpation of the kidney we have a far better guide.

The palpation of the ureters, as I have undertaken to show, presents a valuable addition to our methods of examination, notwithstanding the restrictions which must be placed on its diagnostic value. Its value increases when used in connection with the usual procedure of examining—microscopic examination of the urine, catheterizing, temporary occlusion of the ureters, and palpation of the kidney.

[1] W. Polk: Observations upon the Anatomy of the Female Pelvis, New York Medical Journal and Obstetric Review, 1882. H. Garrigues: New York Medical Journal, 1882.

CORPORAL DISINFECTION IN SCARLET FEVER AS A PREVENTIVE MEASURE TO ITS SPREAD.

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NOTWITHSTANDING the elaborate systems authorized and in force by National, State, and Municipal Boards of Health for the prevention of contagious diseases, it is only necessary to glance at the daily mortuary reports published throughout the country to note their general inefficiency. Though unsatisfactory in many particulars, public hygiene has done much to lessen at the present day the pestilential burdens with which humanity has been afflicted from the remotest antiquity. Small-pox, rightfully regarded at one time as the most fatal of the exanthemata, has sunk into comparative insignificance through the beneficence of vaccination. Typhus, ship, or jail fever has long since been relegated to the shades of the past through an intelligent appreciation of ventilation and necessary air-space; while its congener, typhoid fever, whose infective germ is most probably conveyed by a poisoned water-supply, may later on share a similar fate. Yellow and scarlet fevers, diphtheria, and measles continue, however, to defy the futile efforts of modern sanitation, and still present a bold front in the midst of our most advanced and enlightened civilization. In view of the recent strides in the etiology of disease a more flat-

tering prospect for the eventual subjugation of all infectious diseases by human intelligence lies before us. It has been satisfactorily established that scarlet fever does not originate *de novo* from certain atmospheric or telluric conditions, but is produced by a definite specific principle carried about from place to place. Many countries have been entirely free from it for centuries. It was not known in Europe until 1557, when it was introduced through the gates of Asia, nor did it make its appearance in America until 1735, when it was observed in New Hampshire. So slowly did the infection travel that it did not cross the Hudson River until eighty years later, nor appear as far south as North Carolina until 1830. Dr. Rush said, sixty years ago, that a physician would not likely see more than one case during a lifetime.

While the etiology of scarlet fever has not been thoroughly established by bacteriological investigation, yet there is a general professional concession that it originates from a specific germ, and that susceptibility to it is greatest during the period of desquamation, or when the detached cuticle is broken up and floats through the atmosphere laden down, as it were, with the infectious microbe. There is a unity, also, among the profession as to the method of its dissemination, all agreeing, as a rule, that the poison enters through the respiratory system, though, in a few instances, cases have been supposed to result from the ingestion of food, milk, or water containing the germ or infection; the latter may be probable, but is more than likely rare.

Scarlet fever may be communicated directly or indirectly; by personal contagion, or through the agency of infected clothing, books, letters, toys, hair, or other articles exposed to it. When it is communicated by personal contagion, the distance is usually limited to three feet or less. The non-susceptibility of many persons, when exposed to this disease, is most probably due to an accidental escape from inhaling air containing the germs. Familiar as we have been for many years past with the propagation and spread of scarlet fever, it seems rather strange that no effective system has been devised heretofore for its prevention. So far, instead of endeavoring to destroy the infection by chemical or germicidal measures, we have been satisfied with the more cowardly course of locking up or quarantining it; and consequently the individual who recovered from the disease was commonly sentenced to a dreary confinement of from four to eight weeks.

It seems quite rational to presume that a scarlatinous patient is surrounded by an atmosphere contaminated with the infectious microbe, since we know that an approach within a few feet or less of the patient is necessary to contract the disease by personal contagion. If this be true, we certainly are warranted in supposing that constant inhalation of this poisoned air is liable to increase the severity of the attack, and to keep up, as it were, a constant auto-infection. In view of this fact, it seems to me that a system of daily bodily disinfection would not only destroy the germs so as to prevent the spread of the disease to others, but would be a useful adjuvant to the treatment, inasmuch as through these applications the skin could be kept free from the poison, as well as the atmosphere the patient is compelled to breathe. This practice does away, in my opinion, with the necessity of prolonged isolation commonly enforced. So well am I satisfied with thorough and complete disinfection in scarlet fever, that I believe we can ignore isolation altogether in the mild cases, and ordinarily permit patients to join the family circle in ten days to two weeks—as a matter of course, the severity of the attack and the condition of the invalid being considered.

In presenting the following brief rules as preventive measures to the spread of this disease, I can say that this practice has been founded on personal experience, so far entirely satisfactory; I believe also that this treatment would be successful in the other exanthemata as a preventive measure.

1. Sponge the patient thoroughly morning and evening with a tepid solution of corrosive sublimate, 4 to 1,000, as soon as the eruption makes its appearance.

2. Wash the hair once daily with a solution of the corrosive sublimate, of the same strength, and also a solution of borax, 1 to 250.

3. Disinfect the urine, fæces, and expectoration, also the discharge, from the ears and nose, if there be any. A solution of the bichloride, 1 to 1,000 is best for this purpose.

4. As soon as the patient is permitted to leave the bed have the body washed with warm water and soap, then sponged with the 1 to 4,000 bichloride solution, wiped dry, and anointed with the following ointment:

℞. Sodii biboratis,
Zinci oxidi..... āā ʒ iv.
Ol. gaultheriæ..... ʒ ss.
Vaseline..... ʒ iv.

The hair should be thoroughly washed with the bichloride and borax solution.

5. The patient is then to be enveloped in fresh and clean clothes throughout, and allowed to leave the sick-room if his condition otherwise admits of it.

6. The bed linen, soiled clothes, towels, etc., should be placed in a suitable sublimate solution and boiled, and the room well disinfected with sulphur. The sulphur candles are very convenient, and the disinfection should be repeated the second day, as the germs are very tenacious of life.

7. Require the nurse or attendant to keep the hair, face, and hands well disinfected during attendance, and to likewise make a complete change in his or her garments on date of the disinfection of the sick-room.

8. Continue the provisions of the third and fourth rules once daily until desquamation is complete.

The above method for the prevention of scarlet fever has proven very efficacious in my hands, and, though simple, warrants a fair trial by the profession. I think there need be no fear of corrosive sublimate poisoning, as a very minute quantity of the drug is liable to enter the system by this means. Other germicides may be used in place of the mercury, and it is probable that other eruptive diseases may likewise be treated with success in a similar manner.

Fort Porter, N. Y.

Œdema in Cancer of the Stomach.—M. C. Baert, of Brussels, writing in *La Clinique* on cancer of the stomach, calls attention to the frequency with which œdema of the ankles is met with in this affection after it has lasted a few months—a diagnostic aid which is by no means new, but is, he thinks, in danger of being too much overlooked at the present day. He gives a number of cases recently occurring in the various hospitals in Brussels, in which œdema was present. In one of these cases œdema came on as early as three months after the first symptoms of the affection made their appearance; in two other cases it was noticed after four months; but in most of the other instances it was delayed till the lapse of from six months to a year after the onset. In one case, where there was no evident cause to which to attribute the loss of appetite and the wasting complained of by the patient, Professor Carpentier, noticing some œdema of the ankle, diagnosed carcinoma of the stomach, and found his diagnosis confirmed by the appearance, a month afterward, of all the usual signs of the affection. Several of the cases presented a marked increase in the nitrogen excreted in the urine. With regard to the deficiency or absence of hydrochloric acid in the stomach, in cancer of that organ, M. Baert admits that it is usual, but agrees with Wolff and Ewald in saying that this sign is by no means peculiar to cancer, as it is found in other gastric affections.—*The Lancet*, April 13, 1889.

THE MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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MEDICAL EDUCATION AND ITS CONTROL BY MEDICAL PARLIAMENTS.

THERE can be no doubt that the feeling among the profession of this country in favor of enforcing by law, if necessary, a higher standard of medical education is rapidly growing. It is seen in the constant reference to the subject at the meetings of medical societies and in our current journals. The fight is between some one hundred and twenty medical colleges and the thousand "professors" attached thereto on the one hand, and the medical profession at large on the other. The professors have had the advantage heretofore, because they have made it their special business to kill all obnoxious legislation, while the general practitioner, having no particular and immediate interests to defend, has let matters go on as they were.

Those who, like ourselves, have been contending for higher medical standards and removal of the licensing power from the men who confer medical degrees at $30 per head, are annually helped by the statistical and other work of Dr. John H. Rauch, of Illinois. It is well to confront our readers and the public often with the figures regarding our medical men and medical institutions.

There are now in the United States about one hundred and fifteen thousand doctors, or 1 to every 533.33 inhabitants. In 1880 the ratio was 1 to 601.12. The oft-quoted ratios of other countries are as follows:

Russia (in Europe)	16 : 100,000.
France	29 : 100,000.
Germany	32 : 100,000.
Austria	34 : 100,000.
United Kingdom	61 : 100,000.
United States	187 : 100,000.

We have 118 medical colleges in this country, and the ratio of medical schools to population in this and other countries is as follows:

Austria	1 : 6,032,421.
Belgium	1 : 1,384,163.
Denmark	1 : 1,969,039.
France	1 : 4,513,223.
Germany	1 : 2,350,000.
Italy	1 : 1,353,671.
Japan	1 : 1,716,920.
Norway	1 : 1,806,500.
Mexico	1 : 1,100,890.
Netherlands	1 : 1,015,142.
Portugal	1 : 1,449,517.
Russia (in Europe)	1 : 8,750,000.
Spain	1 : 1,662,586.
Sweden	1 : 1,526,300.
Switzerland	1 : 948,700.
United Kingdom	1 : 844,444.
United States	1 : 518,846.

With such competition among schools, and with their existence dependent upon matriculants, it is impossible that stringent requirements for graduation should be called for. Doubtless, if matters were left to take care of themselves, there would in time arise a general demand among the public for graduates of the best class of institutions. But the "supply and demand" argument is not entirely adequate. There will always be a majority of people quite incapable of judging as to the qualities of a safe and wise physician. They buy the goods most obtrusively thrust at them. For the protection of the public health, and for securing the greatest good to the greatest number, it is necessary to regulate the medical supply by some artificial means.

State Boards of Licensers and Examiners, with powers to prescribe the qualifications both of those who wish to become medical students and of those who wish to become physicians, appear to furnish the best available means for promoting this end at present attainable.

The work of some such a board as this in Illinois, as shown in the table, offers assurance of the utility of the method.

Comparison of the Total Number and Classes of Physicians in Practice in Illinois, July 1, 1877, and July 1, 1887.

	July 1, 1877.	July 1, 1887.
Number engaged in practice	7,400	6,180
Graduates and licentiates	3,600	5,704
Non-Graduates	3,800	476
Percentage of Graduates and Licentiates	48.6	92.3
Percentage of Non-Graduates	51.4	7.7

A modification of the Medical Examining Board was suggested by Dr. Osler in his address before the Medico-Chirurgical Faculty of Maryland. Dr. Osler proposed "the organization of the entire profession in each State into an electorate which shall send representatives to a central parliament, having full control of all questions relating to medical education, examination, and registration."

This means that the doctors of each State should elect their own medical board, and, under certain legal restrictions, regulate their own affairs.

"The powers of such a board," it is added, "would be accurately defined by legislation, and should relate, first, to preliminary education; secondly, to the examination and registration of candidates for the license to practise; and, thirdly, the control of allmatters relating to discipline with the profession. The necessary expense would be met—first, by the fees paid by the candidates for examination; secondly, by a small annual tax levied upon all registered practitioners. Such a body could look forward hopefully to a permanent establishment in each State, with buildings suitably equipped for examination, and with every possible provision for conducting, in an orderly and systematic manner, the business of the profession."

THE ETIOLOGY OF PUERPERAL ECLAMPSIA.

WRITERS continue to argue regarding the exact pathology of puerperal eclampsia. Recently Santos, of Buda-Pesth, and Pajot have argued that the convulsions are due, not to albuminuria, but to a reflex irritation starting in the uterus. Most physicians, however, will hold to the view that puerperal eclampsia is essentially uræmia, and that the convulsions are called out by the inflamed and inadequate kidneys causing poisons to be circulated in the blood. No

doubt the irritation of the uterine nerves acts as an exciting cause in some cases, while in others a predisposition to convulsive seizures exists, and the puerperal eclampsia is really an acute epilepsy.

The idea that puerperal eclampsia is usually only a modality of uræmia is the safest to hold. And M. Émile Blanc has recently contributed some facts to its support (*Lyon medical*, May 12, 1889). The observations were made under the direction of Professor Fochier at the obstetrical clinic, while the bacteriological studies were made at the laboratory of M. Arnoing, and with the help of M. Roux and Professor Boudet. We make these statements because the value of bacteriological work depends entirely upon whether the worker possesses skill, experience, and proper laboratory opportunities.

In 1887 M. Blanc found a microbe in the urine of an eclamptic which he cultivated, and which, inoculated into rabbits, produced convulsions. In February, 1889, he took the urine of another eclamptic woman, and with all possible precautions inoculated gelatine tubes. A peculiar micrococcus developed, having the form of a slender bacillus one to two micromillimetres long. He used the cultures to inoculate thirteen rabbits, two dogs, a guinea-pig, and a rat. In a large number of these there quickly resulted convulsions and, later, signs of acute nephritis. The blood and fluids were found to contain the same microbe, and cultivations of it caused also convulsive phenomena. Some animals in which no convulsions appeared developed albuminuria. Injection of sterilized cultures caused, in one case, albuminuria; in another, posterior paralysis.

The details of M. Blanc's work are not yet given; but he believes it to show that some cases of puerperal eclampsia are due to an organism which causes an infectious nephritis, and which itself appears to generate a convulsive poison. He does not seem to have tried to identify this microbe with any heretofore known.

THE MODERN TREATMENT OF LARYNGEAL TUBERCULOSIS.

A NUMBER of contributions have been made, more or less recently, upon the subject of the therapy of laryngeal tuberculosis.

Dr. W. Schleicher (*Ext. des Ann. de la Soc. de Méd. d'Anvers*, 1888) describes what may be termed benign forms of laryngeal tuberculosis. There are, he says, besides the ordinary types that accompany pulmonary phthisis, cases of laryngeal tuberculosis not associated with any lung disease. The patients simply suffer from hoarseness, pain, and cough, which after a time may disappear, for many of these cases are cured spontaneously. After a time, however, new ulcerations appear, which may be of a severe character but which are usually cured by treatment. The special point which Schleicher makes is that there are mild forms of laryngeal tuberculosis which do not need the severe treatment, such as curetting, lactic acid applications, incisions, etc. Schleicher reports eight cases, the diagnosis being made in most instances by finding the bacillus. The value of the observations depends, therefore, largely upon the skill of Dr. Schleicher in recognizing these organisms.

It is very true that the older opinion that laryngeal phthisis must always be preceded by pulmonary phthisis has been disproved. And other laryngologists, as well as Schleicher, are finding this laryngeal disease more frequent and more amenable to treatment than it was formerly thought to be.

In 1887 Professor Heryng, of Warsaw, asserted that out of thirty-six cases of tuberculous ulceration of the larynx twenty-seven had been cured. In eleven cases the cure was accomplished by lactic-acid applications; in the others, by curetting, and the application of iodoform emulsions.

Dr. Keimar, of Düsseldorf, looks upon Heryng's communication as epoch-making, and strongly indorses his lactic-acid treatment (*Deut. med. Woch.*, 1888, Nos. 46, 48, 51). He rubs upon the ulceration twenty, forty, fifty, and sixty per cent. solutions of the acid. In the severer cases and those with a sclerotic base, the curette is thought necessary. Dr. Keimar particularly urges the necessity for early diagnosis and treatment.

Dr. Sokolowski holds (*Wien. klin. Woch.*, 1889, Nos. 4, 5) a more sceptical attitude toward the subject of curability of laryngeal tuberculosis, especially by local measures. That it is sometimes curable spontaneously, or through local treatment, is true, but in cured cases new ulcerations develop later; and permanent improvement or cure are dependent very much upon the general condition and constitutional treatment of the patient.

Dr. Otto Seifert (*Wien. med. Wochenschrift*, 14, 15, 1889) brings up the subject of tracheotomy in laryngeal phthisis, reporting four cases. Dr. Seifert concludes that tracheotomy can cause an improvement and occasionally cure of the local trouble, that the life of the patient may be prolonged, and made more comfortable, and that the intensity of the pulmonary disease is no contraindication to the operation. These are views that should be accepted with caution. Tracheotomy in laryngeal phthisis is generally both useless and brutal.

The menthol treatment of laryngeal phthisis, as recommended by Rosenbach, has received some support from others, but it is probably much less useful than that by lactic acid.

News of the Week.

SUMMER DIARRHŒA.—The period has come when the well-to-do minority of physicians leaves the city, while the hard-working majority stays in town and writes articles on summer diarrhœa and related topics. Fortunately, something new is furnished us every year on these matters. We have passed from the stage of heat and sour milk as causative factors of summer diarrhœa; we are even leaving the microbe a little behind, and are dallying now with the ptomaïnes. The latest theory is one set forth by Dr. Ballard, in a report to the Local Government Board of England on the causation of the annual mortality from diarrhœa (*Lancet*). Dr. Ballard states his views as follows: "That the essential cause of diarrhœa resides ordinarily in the superficial layers of the earth, where it is intimately associated with the life processes of some micro-organism not yet detected, captured, or isolated. That the vital manifestations of such organism are dependent, among other things, perhaps principally, upon conditions of season, and on the presence of dead

organic matter, which is its pabulum. That, on occasion, such micro-organism is capable of getting abroad from its primary habitat, the earth, and having become air-borne, obtains opportunity for fastening on non-living organic material, and of using such organic material, both as nidus and as pabulum, in undergoing various phases of its life history. That in food, inside of, as well as outside of, the human body, such micro-organism finds, especially at certain seasons, nidus and pabulum convenient for its development, multiplication, or evolution. That from food, as also from the contained organic matter of particular soils, such micro-organism can manufacture, by the chemical changes wrought therein through certain of its life processes, a substance which is a virulent chemical poison; and that this chemical substance is in the human body the material cause of epidemic diarrhœa."

Sulphonal and Our American Laws.—Owing to competition among manufacturers abroad, the price of sulphonal in Germany is said to be only forty-five cents an ounce. In this country our law protects a foreign patentee, and Americans have to pay $2 per ounce for the drug.

The Queen and the London Physicians.—Our esteemed contemporary, *The Lancet*, has been experiencing depths of ecstatic feeling in a degree that is psychologically most interesting. It seems that the London doctors have had a statue of Queen Victoria made, and have set it up in Examination Hall. It was unveiled last month by the Prince of Wales, in the presence of eminent physicians and various members of the royal family; and Sir Andrew Clark made a speech. It was a very good speech, but not a very remarkable one. However, the *Lancet* is inexpressibly moved, and editorially exults over the remarkable talents of Sir Andrew, the unique condescension of the Queen in allowing her statue to be made, the graciousness of Royalty, and the in general supreme advantage of a monarchical form of government. The *British Medical Journal* gives a full-page picture of the statue. *The Hospital Gazette* received no invitation to the unveiling, however, is somewhat acidulous over the matter, and does not think so highly on monarchies.

Removal of a Laryngeal Cancer by Thyrotomy.—This operation has recently been done by Sir William Stokes, of Dublin. The patient was a man aged fifty-six, who had been suffering for eight months. Tracheotomy had been previously performed. The patient has been doing well.

Antipyrin Tippling.—It is said by druggists of this city, that the practice of going to a drug store and calling for ten grains of antipyrin has become a very prevalent one. In large drug stores there is a constant "run" on ten-grain antipyrin powders; in very much the same way that quinine used to be called for ten years ago. The practice of taking antipyrin systematically in any large amount cannot fail to be most injurious. Fortunately, for some reasons, the good effects of antipyrin as an anodyne are soon lost.

Sir William Jenner has received the Grand Cross of the Order of the Bath. This is said to be a particularly grand cross, and one which has never been conferred on a medical man before, with one exception.

The Dangers of the Suspension Treatment of Locomotor Ataxia.—Dr. Gorecki reports the case of a man, aged forty, who was suffering from a very acute form of the disease, and had become almost paraplegic; he read about the suspension treatment in the *Petit Journal*, obtained the apparatus, and had himself suspended by his man-servant for two or three minutes every day. For the first seven days all went well, and the patient noticed considerable improvement in his condition; but, after the eighth suspension, he was extremely ill, and lost speech and hearing. In spite of vigorous treatment, he grew rapidly worse, swallowing became impossible, sight was lost, the arms, and finally the thoracic muscles, became paralyzed, and he died in twenty-four hours, of suffocation. The accidental death in a suspension apparatus of Dr. Vincent, of Sharon Springs, has already been extensively noticed.

Death of Professor Breisky.—The death is announced, at the age of fifty-seven, of Dr. August Breisky, Professor of Gynecology at the University of Vienna. His death will be felt as a great loss to the Vienna Medical School.

Diphtheria and the Saloon Business.—The Paterson Board of Health has decided that where the placing of a green card on a house to indicate the presence of diphtheria on the premises would interfere with the business of a saloon-keeper, the card may be placed on the back door, where the general public may not see it!

The Johnstown Sufferers.—Dr. C. K. Mills and Dr. Thomas J. Mays, a Committee from the College of Physicians of Philadelphia and the Philadelphia County Medical Society to carry relief to the medical practitioners, sufferers by the flood, reached Johnstown on Monday. They found that six physicians were drowned and twenty-one had lost all they had. They will immediately expend about three thousand dollars in the work, which has been subscribed by the profession of Philadelphia, and more money will be raised to continue it if required.—*Medical News.*

Tendon Grafting.—Mr. Mayo Robson, of Leeds, has recently shown that tendon can be successfully transplanted and grafted. In a case reported all the tendons of the back of the hand were torn away, and a hanging tendon from the ulnar side of the palm was stitched to the extensor muscle of the fingers at one end and to the remaining fragment of the extensor tendon on the dorsum of the index-finger. It retained its vitality, and subsequently allowed nearly as efficient movement of the finger as the man had before enjoyed at his work as a weaver.

The Death of Dr. Harrison Teller occurred at Mount Kisco, N. Y., in the seventy-sixth year of his age. He received his license in 1837 from the Westchester County Medical Society.

The New Officers of the Westchester County Medical Society.—The following were elected at the Ninety-first Annual Meeting of this Society, on June 18th: *President*—Samuel Swift, of Yonkers; *Vice-President*—Charles Mason, of Peekskill; *Secretary*—William Frank Green, of Mount Vernon; *Treasurer*—Robert Thomas Howe, of Mount Vernon; *Curator*—Newton Freeman Curtis, of White Plains.

NEW HAMPSHIRE MEDICAL SOCIETY.—The Ninety-eighth Anniversary of the Society was held in Concord, Monday and Tuesday, June 17th and 18th, at the hall of the G. A. R., 15 Warren Street, commencing at 11 A.M., Monday, June 17th.

THE NORTH TEXAS MEDICAL ASSOCIATION met in Paris, Tex., Tuesday, Wednesday, and Thursday, June 11th, 12th, and 13th.

NEW YORK INFANT ASYLUM, MOUNT VERNON, N. Y.—Dr. Charles G. Kerley has been appointed Resident Physician at the New York Infant Asylum, Mount Vernon, *vice* Dr. C. E. Kimball, resigned.

TO CURE SNORING.—The following suggestively effective remedy is offered in answer to the physician's wife who asked for a remedy for a snoring husband: Raise yourself softly on your elbow, and gently but firmly bite his nose.

NEW YORK POLYCLINIC.—The following new appointments have been made at the New York Polyclinic: Dr. Thomas R. Pooley, Surgeon in Chief of the New Amsterdam Eye and Ear Hospital, Ophthalmic Surgeon to the Sheltering Arms, Consulting Ophthalmologist to St. Bartholomew's Hospital, Professor of Ophthalmology; Dr. B. Sachs, Consulting Neurologist to the Montefiore Home for Chronic Invalids, Professor of Neurology; Dr. L. Emmett Holt, Consulting Physician to Hospital for Ruptured and Crippled, Professor of Diseases of Children (Visiting Physician to the New York Infant Asylum); Dr. August Seibert, Physician to the Children's Department of the German Dispensary, Professor of Diseases of Children; Dr. H. Marion Sims, Gynecologist to St. Elizabeth's Hospital and New York Infant Asylum, Professor of Gynecology; Dr. William H. Fluhrer, Surgeon to Mount Sinai and Bellevue Hospitals, Professor of Genito-urinary Surgery. The Polyclinic has increased its hospital facilities by the purchase of a large building immediately adjoining its original property, and after making necessary changes will furnish and have it open by September 16th, when the regular session will commence.

THE TENEMENT-HOUSE AS A HEALTH-RESORT.—According to a report on the mortality of this city recently made to the Board of Health by Dr. R. S. Tracy, the mortality of our tenement-house population is considerably less than that of the general population, the figures given being as follows: Total population, 1,526,081; total deaths, 40,175; tenement population, 1,093,701; tenement deaths, 24,842; general death-rate, 26.33; tenement death-rate, 22.71. To bring up the average, it follows that the death-rate among the population not living in tenements must be about twenty-eight per thousand. The results of the investigation are summed up by Dr. Tracy as follows: "The death-rate in tenement-houses is less than the general death-rate of the city. The death-rate in the large tenement-houses is less than in the smaller ones. That while diarrhœal diseases and diphtheria show a greater death-rate in the larger houses (leaving the suburban districts, where the conditions are very different), phthisis and pneumonia show comparatively little difference, that difference, however, being in favor of the larger houses. The greatest general death-rate among persons over five years of age, the next to the highest death-rate from diarrhœal diseases and pneumonia, and markedly the highest from phthisis, are in the district south of Fourteenth Street and west of Broadway. The excessive mortality in this part of the city is probably connected with the great number of old houses and the dampness of the soil. These results are much at variance with what was expected. It seems to be sufficiently established that people do not live under such extremely bad sanitary conditions in the tenements as they have been supposed to."

RUSH MONUMENT COMMITTEE.—The Rush Monument Committee will meet in the right gallery-room, at Music Hall, Newport, R. I., on Tuesday, June 25th, at 1 P.M., immediately after adjournment of the morning session of the American Medical Association. The attendance of others interested in the project is invited. Collections and subscriptions should be forwarded to the Treasurer, Dr. Joseph M. Toner, 615 Louisiana Avenue, Washington, D. C., before June 15th. Albert L. Gihon, M.D., Chairman R. M. C.

NEW YORK POST-GRADUATE MEDICAL SCHOOL.—The summer term of this institution commenced on June 17th. The fees for this session are one-half those of the winter term, and yet the advantages in the dispensary of the school, and in many of the hospitals of the city, are quite as good as during the winter.

Obituary.

JAMES ETHELBERT MORGAN, M.D.,

WASHINGTON, D. C.

DR. JAMES ETHELBERT MORGAN, Emeritus Professor of Materia Medica in the Medical Department of Georgetown University, died in the city of Washington, June 2, 1889.

Dr. Morgan was born in St. Mary's County, Maryland, September 25, 1822. In 1845 he settled in Washington, and continued in the active practice of his profession until within a few months of his death. Coming to the city in the earlier days of its history, he grew up with the place, becoming widely known, and possessing for years the highest confidence and esteem of the oldest and best residents, many of whom have been his devoted friends. Although mainly distinguished in the line of general practice, he contributed numerous articles upon medical topics to the literature of the day. His "Defence of Medicine and of the Medical Profession," an oration delivered before the Medical Society of the District of Columbia about five years ago, was a powerful and philosophic plea for the value of drugs in the curing of disease. He had been President of the Medical Association, and of the Medical Society of the District of Columbia. He was consultant in the Columbia Lying-in Hospital, and in the Central Dispensary, and for many years was a member of the Judicial Council of the American Medical Association.

With Dr. Robert King Starr, he was appointed to investigate the causes of the celebrated National Hotel disease, an epidemic of historical importance, which occurred in 1859, as will be well remembered by our older readers.

A finished classical scholar, Dr. Morgan retained his fondness for this study until the last.

He leaves a widow and six children—three daughters, one of them the wife of the Hon. Emory Speer, United States Judge for the Southern District of Georgia, and three sons, two of whom, Dr. Ethelbert Carroll Morgan and Dr. J. Dudley Morgan, are physicians practising in Washington.

Personally, Dr. Morgan was of commanding figure, fine address, and great geniality of disposition; a devoted physician, a courtly gentleman, and a man whose sterling qualities of mind and heart were recognized by all.

Society Reports.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, February 13, 1889.

(Continued from p. 446.)

WILLIAM P. NORTHRUP, M.D., PRESIDENT, IN THE CHAIR.

DR. L. EMMET HOLT presented a larynx showing

ULCERATION OF THE VOCAL CORDS FOLLOWING MEASLES.

The patient was admitted to the Randall's Island Hospital in June in wretched condition, at that time one year of age. She gained in weight and improved steadily until she took measles, January 5th. The rash came out well and the constitutional symptoms were of only average severity. She did well until January 17th, when hoarseness, nasal discharge, and a rise of temperature led to the suspicion of diphtheria, although no membrane was visible anywhere. From this time until death, which occurred January 25th, she had loss of voice, considerable laryngeal dyspnœa, and, in fact, all the usual symptoms of membranous laryngitis. She was not operated upon, although the dyspnœa was so severe that it was contemplated several times. She emaciated steadily and died of exhaustion apparently. Throughout the last week of the illness there was considerable choking whenever the attempt to swallow fluids was made.

Autopsy.—Brain not examined. Larynx: The vocal cords were completely destroyed by ulceration, which extended upward to the ventricles of the larynx and downward for nearly one-fourth of an inch. The ulcer went apparently down to the cartilages. Its surface was covered with a ragged mass of necrotic tissue. It had all the appearances of being of recent formation. The larynx otherwise showed no noteworthy change. No false membrane in larynx, trachea, or bronchi. Lungs: The right contained several old, cheesy nodules, the largest being the size of a walnut. Nothing recent in either lung, and no pleurisy.

There was nothing of interest or importance seen in liver, spleen, kidneys, stomach, or intestines.

Dr. Holt also presented a specimen of

CYSTIC DEGENERATION OF THE KIDNEY.

The patient was a female in middle life who died of chronic suppurative peritonitis, having been under operation only a few hours before death. The right kidney was enlarged—weight, five ounces—and presented the usual appearances of chronic diffuse nephritis, quite well marked; the capsule was adherent, the surface granular, and the cortex a mottled yellowish-white color. The right kidney weighed one ounce; it was made up of cysts, the largest of which were about three-quarters of an inch in diameter. It was enveloped in fat, and on section very little renal tissue was seen. Dr. Holt had not made the autopsy, but in the specimen as shown there had been found no ureter. The heart was also shown. It exhibited the lesions of well-marked mitral stenosis, the orifice not admitting one finger.

DR. BIGGS did not think that the specimen was one of congenital cystic kidney. He asked if the speaker had ever seen any other congenital cystic kidney of such small size.

DR. HOLT said that he had presented one to the Society some time ago weighing only about half an ounce. He had also seen another one that was very small. He had supposed that this one was congenital from the fact that no trace of a ureter could be found.

THE PRESIDENT had seen several cases of ulceration of the vocal cords in children, but had never been able to account for them satisfactorily. He believed that Dr. Holt's case was one of diphtheritic ulceration.

DR. H. M. BIGGS presented some specimens illustrating

TUBERCULOSIS OF THE FEMALE GENITAL ORGANS.

The subject was a woman, fifty-seven years of age, who had died in Charity Hospital a short time after admission. The abdomen was noticed to be slightly distended, and the patient had had an irregular temperature, reaching at one time 101.5° F. The clinical history was otherwise incomplete. At the autopsy, evidences were found of recent tubercular peritonitis with little or no exudation. In the lungs scattered tubercles were seen, and at the apex of one lung was a rather large cheesy nodule. The uterus was somewhat distended, and, on being cut into, was found to be filled with caseous matter. Both Fallopian tubes were dilated, the dilatations being nodular. A cheesy mass was also found in the right ovary. Tubercle bacilli were present in large numbers in this caseous material.

These cases of tubercular disease of the female genital organs, the speaker said, do not seem to be recognized, in this country at least. There should not, however, be the slightest difficulty in making a diagnosis, for the discharge contains bacilli in great numbers. The disease, furthermore, could not be so very rare, for he had seen four cases within the past year. In three of these cases the process seemed to be older in the genital organs than anywhere else.

A second specimen was one of

GUMMY TUMORS OF THE BRAIN,

illustrating the symmetry of the lesions of syphilis in this organ. The patient presented symptoms of tertiary syphilis, and some months before death he developed ophthalmic paraplegia—double ptosis. As a result, probably, of this, he fell while going down-stairs, and broke his skull, death resulting. At the autopsy a gummy tumor was found on each third nerve, and there was also a slight thickening about the infundibulum and about the fissure of Sylvius on each side.

Dr. Biggs also presented a third specimen, showing

IMPACTION OF A GALL-STONE IN THE CYSTIC DUCT,

completely obliterating the duct. Afterward the fluid contents of the gall-bladder had been absorbed, and the bladder-walls had contracted down, closely embracing the contained calculus. There had been no symptoms occasioned by this condition; none, at least, during the time that the patient had been under observation. Death resulted from the rupture of an abdominal aneurism.

DR. W. P. NORTHRUP presented the

GIZZARD OF A FOWL IN WHICH WERE THREE PINS.

The pins were found when the chicken was being dressed for the table. They were very firmly embedded in the walls of the gizzard, and could not be pulled out with the unaided fingers.

The Society then went into executive session.

Stated Meeting, February 27, 1889.

WILLIAM P. NORTHRUP, M.D., PRESIDENT, IN THE CHAIR.

DR. GEORGE C. FREEBORN presented some specimens showing

CARCINOMA OF THE CERVIX UTERI, FIBROMA OF THE UTERUS, AND OCCLUSION OF THE LEFT URETER BY A CARCINOMATOUS MASS.

The patient, a woman, about thirty years of age, was attacked, shortly after her admission to the New York Cancer Hospital, with severe vomiting. Soon after that she had a severe convulsion. Alternating attacks of vomiting and convulsions continued for three days. The patient finally died in a convulsion. The examination of the urine during this time was negative.

Autopsy.—The brain was slightly œdematous, but otherwise normal. The thorax was not examined. The stom-

ach, liver, spleen, and intestines were normal. The right kidney was slightly enlarged, and showed the gross lesions of chronic diffuse nephritis. The left kidney was about normal in size, and showed the same lesions as the right. Its pelvis was dilated to twice the normal size. The left ureter was dilated throughout its entire course to the base of the bladder, where it was lost in a mass of carcinomatous tissue. It measured 1 ctm. in diameter, and was filled with urine. The uterus was enlarged, measuring 12 ctm. in length, and 8 ctm. across the horns. The ovaries were slightly enlarged, cystic, and bound down to the uterus by adhesions.

Upon making an antero-posterior section through the uterus and upper part of the vagina, it was found that the cervix uteri was almost completely destroyed. The posterior wall of the vagina was infiltrated with a dense, diffuse mass. A portion of this mass extended into the wall of the bladder, in the shape of a conical projection, measuring 1½ ctm. in height, and 2 by 3 ctm. at its base. The apex of this mass pressed upon the left ureter, completely occluding its lumen as it passed into the bladder. The mucous membrane of the bladder over this mass appeared normal.

At the fundus of the uterus, attached to the left wall, and filling up the entire cavity, was an oval mass. On section the mass measured 4 by 4½ ctm. It had a white, glistening appearance and was quite hard.

Microscopical examination.—Sections from the cervix uteri and from the mass infiltrating the vaginal wall showed the growth to be carcinoma of the epitheliomatous type. Sections from the uterine tumor showed it to be a fibroma.

Dr. Eugene Hodenpyl presented some specimens showing

INFLAMMATION AND GANGRENE OF THE VERMIFORM APPENDIX.

According to the patient's own account he had been in perfect health up to four days before his admission to the hospital. He then began to complain of pain in the right inguinal region, and presented other symptoms of perityphlitis. Examination revealed the presence of pus in the right iliac fossa, and a small incision, two and a half inches long, was made to give exit to it. The patient was, however, not relieved, and died shortly afterward.

At the autopsy the lungs were seen to be intensely congested. The abdominal cavity contained about two quarts of pus, and the intestines were more or less covered by adhesions. The vermiform appendix was distended, and in a condition of commencing gangrene. The pus surrounding the appendix had burrowed up behind and around the right kidney, and its effects were shown by a necrotic condition of the fat. The left kidney presented the lesions of parenchymatous nephritis. The specimens showed these lesions, and also a part of the abdominal wall, in which the incision was made down to the seat of disease.

In reply to a question as to the length of time that the disease had existed, Dr. Hodenpyl said that, according to the patient's statement, it was only four days, but he thought the time must have been longer than this.

Dr. Lewis Hall Sayre presented a

TUMOR OF THE BREAST,

together with an enlarged axillary gland, removed from a negro woman about sixty-five years of age. Some five or six years ago the patient had first noticed a slight swelling in the left breast, accompanied by lancinating pains, and this had continued to grow slowly. She was a washerwoman, and had followed this occupation up to the day before the operation was performed. The breast was removed by an elliptical incision, the only thing worthy of remark about the operation being the difficulty experienced in bringing together the edges of the wound by reason of the large amount of tissue that had to be removed. The only gland that appeared to be affected was one in the lower part of the axillary region, well under the pectoralis major muscle. This was removed, and was shown with the breast. The tumor was apparently a carcinoma, and Dr. Sayre asked that it be referred to the Committee on Microscopy for examination.

Dr. William P. Northrup presented some specimens, removed from a child aged five weeks, showing the

ARREST OF DEVELOPMENT OF ONE KIDNEY.

The specimen showed the mere rudiments of the left ureter, at the extremity of which was a bulbous tip, 1 ctm. long by 2 mm. in breadth, representing the undeveloped kidney. The speaker had previously presented two cases of displacement downward of the kidney, and in each case, as in this, it was the left kidney that was concerned. In both these cases the suprarenal bodies were in their normal position. The child from whom this specimen was removed had presented no symptoms directing attention to the kidneys. The ureter had evidently not increased in length for some time, though there had been some enlargement of its calibre. The rudiment of the kidney was lying on the left common iliac artery at the level of the last lumbar vertebra.

Dr. Messenger asked whether there was any arterial supply to the rudimentary kidney.

Dr. Northrup had been unable to discover any vessels, even rudimentary ones.

Dr. J. C. Peters said that one of the first specimens examined microscopically in this Society was one similar to this, and he thought it would be interesting to compare the results of an examination in the present instance with what was observed in the other.

The Society then went into executive session.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, March 14, 1889.

J. Lewis Smith, M.D., Chairman.

A CASE OF LARYNGISMUS STRIDULUS AND ECLAMPSIA ASSOCIATED WITH RACHITIS.

Dr. H. W. Vineberg read the history of the case, which was prefatory to a paper on the subject. The child was nine months of age, born in normal labor, and, until laryngismus stridulus developed at the sixth month, gave a fair history. At the outset of the attacks they were repeated three or four times a day, later they were not so frequent, they began to terminate often in a convulsive seizure, and the convulsions sometimes occurred independent of the laryngeal symptoms. The only additional symptom was marked constipation. The mother said the child sweat freely about the head. When Dr. Vineberg saw the patient its muscles were flabby, it was anæmic, the liver and spleen were enlarged, the cranial bones were not softened, but there were indications of rachitic constitution. The principal treatment was at first regulation of the diet and hygienic instructions, but the patient did not improve until he had given bromide of potassium. While taking this no attacks occurred, but when it was used up there were two spasms of the larynx. The bromide was again ordered, and the attacks ceased.

In his paper the author referred to the views of different men on the causation of the attacks, and said that swelling of the thymus gland had once been rejected as a cause, but lately Dr. Jacobi had expressed the view that it was sometimes the exciting cause. Many admitted the frequent accompaniment of rachitis, and he had himself never seen a case, except in rachitic children. Laryngeal spasm was most frequent between the fourth and twenty-fourth month of life, and was much more common in boys than in girls. Irritation in any part of the body might precipitate an attack. It was usually accepted that enlarged tracheal and bronchial glands might act as the pathological factor through irritation of the vagi. The

diagnosis was easy, the prognosis was grave, the majority of severe cases proving fatal. Death might occur during an attack, by intercurrent disease or gradual exhaustion. There could be no doubt, however, that many infants suffered from a milder form of the affection, recovered, and were not seen by the physician. The author related such a case, seen by him for another affection.

The treatment related to the attacks and the intervals. If the attacks were mild they passed off so soon that nothing could be done. If they were severe the child should be set in warm water, while cold water was applied to the upper part of the body. Tickle the fauces with the finger to start vomiting. If this did not succeed, nothing would act quickly enough, unless it were apomorphine hypodermatically. It was too dangerous to trust the use of chloroform or ether to the mother. The treatment between the attacks related to diet, general hygiene, removal of sources or irritation, overcome constipation; of drugs, those most used were bromide of potassium, musk, and belladonna. Rickets in some form were usually present, and in addition to other treatment phosphorus should be given in cod-liver oil.

Dr. Vineberg also related

A CASE OF TETANY IN A CHILD.

The child was then fifteen months of age, and several times during life had had mild attacks, during which it caught its breath, and on one occasion the breathing stopped, the eyes became suffused. Later the feet took on spasmodic contracture, assuming the position of valgus, and there was contracture of the fingers of both hands. Thus the child had suffered from laryngismus stridulus and tetany. He believed the latter affection was rare in children.

Dr. A. Jacobi said the cause of spasm of the glottis must be looked for in some irritation of the recurrent laryngeal nerve through which it was innervated, or indirectly of the pneumogastric. That irritation might be local or peripherous or central. If peripherous, it might be in the stomach, which was supplied by the pneumogastric. The recurrent might be irritated by a mediastinal tumor, by an enlarged bronchial gland, or it might be pressed upon by a large thymus gland. In children the space between the manubrium sterni and the spinal column was very narrow, considering the vessels which passed through it, and it was quite reasonable to suppose that swelling of the thymus, which in some children was of some size, might press upon and irritate the recurrent nerve. There was clinical evidence to prove this. He believed forty-nine out of fifty cases of laryngismus stridulus occurred in rachitic children. He showed the bones of the skull in such a case, illustrating the marked softening, usually with thinning, which took place in their structure, and said there was a condition of hydrocephalus, with or without much effusion, and one need not wonder that in such a condition there should be peripheral irritations. The temporary congestion, or anæmia at the root of the nerve supplying the glottis, might excite a spasm, and it was to be noted that the commencement of the attack was one of paralysis, and the crowing noise took place when there was reaction.

Introducing the finger down the throat during the spasm served another purpose besides that of exciting vomiting, although this latter was important. It caused the tongue to roll from off the glottis, which it might obstruct by being partially swallowed if long and free. The case of tetanic spasms related by Dr. Vineberg, showed that the source of irritation was not always the same.

The Chairman had seen three cases of tetany in children within two months recently, while he had not seen more cases within three years previously. In all there was a history of intestinal irritation.

Dr. C. H. May then read a paper entitled

SCARLATINOUS OTITIS.

Dr. Samuel Sexton opened the discussion, and directed his remarks chiefly to the question of treatment, which was the same as in otitis from other causes or accompanying other diseases. He prefaced his remarks by describing some anatomical specimens, illustrating the different locations of the inflammation. The treatment varied according to the location. The least common, but most important situation, was in the upper part of the tympanum, in the attic of the ear, beyond the reach of vision. Here, if the drum-head were perforated in the direct line, it would give no exit to pent-up matter. Use a curved knife, pass into the upper posterior quadrant, cut down to the bone. It was more difficult than direct puncture in the lower posterior quadrant. The child should be chloroformed, good illumination should be obtained, best by the electric light. If there were inflammation about the ear, it was usually best to incise down to the bone. He had not for many years applied leeches, blisters, or iodine. Syringing once or twice a day, at least in the acute stage, was often enough. He thought there was usually too much poulticing. He thought the exudation often described as diphtheritic was not really diphtheritic. After drainage was established he gave minute doses of aconite, largely diluted with water, or of gelsemium. If an anodyne were called for, it should be in liberal quantity, as small doses seemed to increase the pain. Deafness was more likely to result from adhesive inflammation than from destruction of the drum-head. There might even be loss of the ossicles, with destruction of the drum-head, and hearing still be preserved. He thought sympathetic irritation from the teeth was often a cause of increased aural inflammation.

Dr. Gruening thought with the author that incision of the drum-head should be made at an early stage. The operation was a simple one, and to go into refinements when addressing the general profession was uncalled for. He did not use leeches nor iodine, nor did he employ Politzer's method in children, as it was likely to do more harm than good. Neither could the Eustachian tube be catheterized in these patients. Matter could be better pumped out than syringed out from behind. He thought it preposterous to speak of dentition in connection with otitis media in scarlatina.

Dr. O. D. Pomeroy thought it all important to prevent at the outset, if possible, a formidable attack. It was very well to cut the drum-membrane after the cavity was distended, but what was more desirable was the prevention of pus-formation. The cause of deafness was more likely, in his opinion, to be secondary labyrinthine changes than anything else. The physician should seek to diminish excessive hyperæmia early in the case. For this purpose he was sure leeches were of value. He used the aural douche, even before perforation of the drum-membrane, as it reduced hyperæmia and relieved pain. It did not macerate the parts as poulticing did. The water should contain a little salt, to render it non-irritating. Then he made warm applications to relieve pain; the rubber bag, made almost hot, had a delightful effect. Water for syringing the ear should be too hot for the hand. One gentleman had said that after rupture of the drum-membrane Politzer inflation should not be practised. He would, he said, sit down on that with all his avoirdupois. As to cutting down on the mastoid, he was accustomed to cut down on the apex of the swelling, wherever located. Boracic acid should not be used in acute suppurative otitis, as it acted as an irritant. In some chronic cases it acted better than anything else.

Dr. T. R. Pooley did not think otitis occurring during the course of scarlet fever possessed any distinctive characters which warranted the use of the term "scarlatinous otitis." He did not think it advisable to add another name to the nomenclature. In treatment of the acute affection the most important element was rest. But children with scarlatina were likely to be quiet in bed any way. Next in importance was local extraction of blood. This would often obviate the necessity for perforating the drum-head. Next in importance was the instillation into the ear of water as hot as it could be borne. He used the

ordinary medicine dropper. Paracentesis was called for where there was bulging of the drum-head. He was thoroughly in accord with those gentlemen who said that the use of either the catheter or Politzer method was injurious in acute inflammation of the middle ear. The sudden impact of cold air did harm. Cleansing was best effected by the syringe.

DR. GRUENING explained that he did not favor the use of leeches in scarlatina otitis, because of inability to exactly regulate the amount of blood lost. This was less important in other cases, and there he applied them.

In closing the discussion, DR. MAY said he used Politzer's bag only where there were symptoms indicating retention in the middle ear.

DR. A. BROTHERS then read extracts from his paper,

REPORT OF ONE THOUSAND CONSECUTIVE CASES OF DISEASES OF CHILDREN, WITH SPECIAL REFERENCE TO TREATMENT.

The cases were treated in the outdoor department of Bellevue, extending from April until December of last year. He stated incidentally that he believed the dispensaries, owing to lack of suitable arrangements, often acted as centres for the spread of contagious diseases. Salol was a failure in the gastro-intestinal troubles. The urine was best collected in children by the use of a small, semi-elastic catheter. There was an interesting case of death from purpura hemorrhagica in a child which had almost completely recovered from an attack of gastro-duodenitis. Phosphorus in oil had proven of speedy benefit in rickets.

The Section adjourned by limitation.

SECTION ON NEUROLOGY.

Stated Meeting, April 12, 1889.

LANDON CARTER GRAY, M.D., CHAIRMAN.

DISCUSSION ON NERVOUS SYMPTOMS ARISING FROM OVARIAN DISEASE, AND THEIR TREATMENT.

DR. C. L. DANA opened the discussion, giving an outline of the points which he thought should be brought up, and expressing his own opinions as far as he had been able to form any from observation.

He took ovarian irritation to mean, not anything like irritable heart or irritable stomach, but a condition of the ovary which produced general or certain remote symptoms by reflex influence. He did not think it was intended to discuss the question of ovarian irritation which manifested itself as a neuralgia. One question for discussion was the anatomical basis for the ovarian irritation. It was claimed, he believed, that in ovarian irritation there need be simply some nervous or physiological change, not a gross anatomical alteration. Charcot seemed to hold that in ovarian hyperæsthesia there might be only a functional change producing a general neurosis. When an anatomical change was present, by far the most common was hyperæmia and chronic ovaritis. These were so much more frequently alleged as causes of the symptoms that parenchymatous diseases, cysts, and malignant tumors might be left out of the discussion. The latter did not seem to cause the symptoms commonly attributed to irritated ovary. He had found in printed works a great many different diseases attributed to ovarian reflexes. For example, such vaso-motor disorders as irritability of the heart, and angina-like attacks, hystero-epilepsy, mania, melancholia, neurasthenic states, as sciatica, insomnia, dyspepsia, intercostal neuralgia, bladder and rectal pains. These and other disorders had been ascribed to ovarian irritation; more especially, he believed, to chronic ovarian hyperæmia and inflammation.

The question arose, in what degree these indirect, or perhaps he should say direct, so-called ovarian reflex disorders were really due to the ovaries. His own opinion was, that if an ovary were healthy it could not produce such disorders; that was, if it contained no anatomical changes. He did not believe there was any proof that functional change in the ovary was the starting-point of hysterical convulsions, epilepsy, chorea, etc. Nor did he believe that chronic ovarian hyperæmia and chronic ovaritis could produce any of the severe constitutional neuroses of themselves; their influence in the production of such neuroses had been very much over-estimated. Furthermore, he did not believe that removal of the ovaries cured the neurosis in any degree comparable to other measures, and it seemed to him that such practice was, on the whole, unscientific as well as unsuccessful. Exception might be taken to his conclusions, but they were based on reasons like the following: (1) The nervous diseases mentioned (convulsive hysteria, epilepsy, mania, etc.) usually occurred in persons with perfectly healthy ovaries; (2) the ovaries might be moderately or very markedly diseased without any such symptoms; (3) the removal of the ovaries had not been attended by any great success in the cure of such neuroses. In support of his views Dr. Dana analyzed some of the statistics of removal of the ovaries in patients subject to hystero-epilepsy, etc., among others those of Battey, and claimed that the conclusions of some were not justified by the facts. Hysteria was a brain disease; in it the patient showed a tendency to direct the mind to some pathological process, and usually in women it was to the pelvic organs.

Dr. Dana concluded by saying that the tripod of life was the brain, the stomach, and the pelvic organs. In the stomach was manifested the instinct which preserved the individual; in the pelvic organs, that which preserved the race; and in the brain, that which perpetuated those qualities distinctive of man—the spiritual and the intellectual faculties. Neuroses were largely peculiar to man, and it was a mistake to so commonly attribute them to organs characteristic of both man and beast.

DR. W. GILL WYLIE read a brief paper, expressing his views on the subject under discussion. He was inclined to think that the influence of the ovaries in producing reflex nervous symptoms had been overrated. Diseased ovaries were likely, in delicate, nervous women, to produce reflex symptoms, while women with a well-balanced nervous system might go about with diseased ovaries without ever having definite reflex symptoms due to such disease. Imperfectly developed women almost invariably had imperfectly developed uterus and ovaries, and were more likely than their sisters to have uterine and ovarian disease, and also disease of the nervous system.

He had nearly always found chronic uterine and ovarian disease complicated by an abnormal condition of the rectum or colon, and he had obtained some brilliant results in nervous disorders, supposed to be due to uterine or ovarian disease, by treatment directed to the rectum and colon.

In patients with mental disturbances he always sought the advice of an alienist. If other measures failed to allay symptoms, laparotomy should be considered. Certain forms of ovarian disorders might be rendered latent by local treatment, but they were very apt to manifest themselves during the menstrual period. This was especially true if the organs were covered by exudations; in organic ovarian disease the only cure was removal. He mentioned one case of nervous disorder of eight years' duration, treated some time by an alienist, cured by ovariotomy. In other like cases he had removed the ovaries with good results. But in definite forms of brain disease he had not seen special benefit from removal of the ovaries. Unless physical signs of disease of the ovaries were present, he would not advise their removal for epilepsy. His experience with ovariotomy for epilepsy had not been very favorable.

DR. BENJAMIN SACHS thought from Dr. Wylie's remarks that there was to be little room for controversy between the neurologists and gynecologists. He did not believe that any present would be in favor of subjecting the ovaries to any severe treatment for chronic constitutional neuroses, such as epilepsy and chorea. He knew of two

cases in which the ovaries were removed for the cure of epilepsy. In one, the attacks ceased for four months, and in the other, about nine months, and then returned. It was but natural that they should return. One of these cases showed that hystero-epilepsy might exist with perfectly normal ovaries, and that the neurosis might continue after removal of those organs. He thought the subject would reduce itself to the question, Should the ovaries be removed for hystero-epilepsy? If the gynecologist found actual changes in those organs, their removal might be justifiable, but in a large number of cases of hysteria which came to the neurologist the ovaries showed no actual changes. The hyperæsthetic ovary was only a part of a general hyperæsthetic constitution. If it were removed, the hyperæsthetic state would probably break out in some other place. It seemed to be only a question of whether the symptoms would return within six months or within a year.

Dr. Putnam-Jacobi first spoke of the necessity of distinguishing between those cases in which the pain was in the ovary and due to some ovarian disease, and those in which it was only an hallucination of the hysteric brain. In grave hysteria, or constitutional hysteria, in which the symptoms developed without apparent cause, the patients were usually remarkably free from organic, uterine, or ovarian disease. In those cases the question of whether removal of the ovaries would have any effect upon the hysteria or nervous disorder would depend, she thought, upon whether the operation would have any effect upon the brain. She thought ovaritis never occurred as a primary disease, any more than did engorgement of the lymphatic ganglia. She believed it invariably began in an endometritis at the fundus, and on this account it was exceedingly difficult to distinguish between symptoms properly belonging to the ovary and those arising from the endometritis. Nausea and tympanites were two symptoms markedly characteristic of lesion of the utero-ovarian nerve, if she might so speak. Latest observations, she believed, showed that although the ovaries received nerves from the lumbar plexus and sympathetic, yet all the filaments terminated in the blood-vessels, so that the first effect of any irritation of the ovarian nerves was relaxation of the blood-vessels, and the remote effects consisted primarily in vaso-motor disturbance. Angel had shown that one of the fundamental difficulties in certain forms of neurasthenia was a cramp of the blood-vessels of the brain, causing a special form of cerebral anæmia. Of the remote disorders from ovarian trouble there was one which had not received sufficient attention, except in England. It was so-called ovarian dyspepsia, which might be interpreted as a cramp of the blood-vessels of the mucosa of the stomach. She had relieved one such case by the galvanic current.

Dr. W. R. Birdsall thought the conclusions of Dr. Wylie, regarding operations in these cases, were reasonable; that an operation should not be undertaken unless there were some other evidence of ovarian disease than the nervous disorder. Dr. Wylie's experience with removal of the ovaries in such cases, when they showed no local signs of disease, would probably prove that of future operators. His own experience with this class of patients was such as to lead him to think that removal of symptoms in one direction would frequently be followed by an outbreak in another direction. He mentioned one case in which treatment of the ovarian and uterine condition corrected what appeared to be reflex nervous disorder; while in three cases removal of painful ovaries had not resulted in curing the pain. In other affections, as well as in ovarian disease, removal of the diseased organ, which had led to changes in the central nervous system, might not be followed immediately, at least, by cure of the painful symptoms. He thought there were two extremes to the question. There were cases in which the ovaries had been removed when they should have been let alone, while in others their removal would have been followed by cure.

Dr. H. T. Hanks, taking a practical rather than a physiological or theoretical stand-point, viewed the subject about as had Dr. Wylie. There were many different conditions which would cause pain in the region of the ovary, and in some, judicious and persistent treatment of different kinds, including electricity, would give relief. When, in connection with the symptoms referred to the ovaries, physical signs of disease were evident, they should be removed.

Dr. H. J. Boldt said he took about the same ground as the other speakers. Dr. Wylie, he thought, was very fortunate in relieving a patient immediately of her symptoms by removal of the apparently healthy ovaries, when the patient had been bedridden for so long a time. He had a similar case in which improvement took place after the operation, but in the course of time the old symptoms returned. Also in a case of hystero-epilepsy growing worse with advance in age, attacks brought on by pressure on the ovaries, failure to obtain relief by other means, removal of the ovaries caused improvement for a time, but the attacks gradually returned. He believed there was one other case with a similar history on his books. Therefore he had made up his mind that, where the ovaries were apparently normal, their removal would not cure the reflex nervous condition, of whatever nature it might be. Operative treatment in such cases was sometimes followed by a worse condition of the nervous system than had existed previously. He had cured one case of vaso-motor disturbance, manifesting itself in swelling and discoloration of an upper extremity, by treating pelvic disease with the tampon, etc.

Dr. Goelet had cured attacks of epilepsy, preceding and following menstruation, by dilating the cervix. He had seen a case of reflex irritation in the spine, diagnosticated and treated for spinal meningitis without success by a distinguished neurologist, which he afterward found to be due to ovaritis and salpingitis caused by anteflexion and stenosis of the uterus, completely cured by cervical dilatation.

Dr. Field thought an interesting question was, How many patients who had lost their ovaries were then in an asylum for lunatics? About five years ago he was somewhat alarmed at the number that it seemed might enter Blackwell's Island. The past year, however, there had been only five. If it was the custom among gynecologists, as Dr. Wylie said it was with him, to have patients examined by an alienist before removal of the ovaries, it would seem that the operation must have had something to do with precipitating the insanity. He had no doubt that many of those patients were predisposed to insanity, but the effect of the operation, including shock and etherization, must have had something to do with bringing on the insane state. Probably thirty or forty cases of this kind had come under his observation at Blackwell's Island.

The Chairman remarked that if a physician took up a specialty he would certainly relieve certain disorders pertaining to that specialty, and by his treatment also relieve certain functional disorders; and the enthusiasm of the patient was likely to lead him to expect much from the same treatment in similar cases. Thus the specialist, unless his mind was broad, was in danger of falling into vagaries. If one relieved epilepsy by an operation upon the pelvic organs, it was very necessary, if he would not fall into erroneous conclusions, to know what epilepsy would do if left alone. In 1828 Esquirol put his insane epileptics on all the various forms of treatment then in vogue, subjecting some to one, and others to another, form of treatment, while some were let alone, and he got equally good results in the several classes. All improved for a time, and all relapsed for a time.

If one had a disorder of the conscious nervous system, as a sciatica, he could locate it exactly; but it was a peculiarity of a disorder of the involuntary nervous system that one could no longer exactly locate it. All those disturbances arising in half-consciousness were much more painful

or distressful to the patient than those arising in consciousness. The involuntary nervous system had greatly more to do than merely contract and dilate the blood-vessels. It presided over all the organic functions of the body, and any disorders of it were only half-conscious, and proved very distressing. Because only half-conscious, it was very difficult to localize reflex disturbances. While he was very sceptical with regard to the value of ovariotomy in epilepsy, yet he had seen two cases in which epilepsy ceased with the cure of a vaginitis. The cases of ovarian epilepsy which had come under his observation were not of grand mal, but of slight loss of consciousness.

DR. WYLIE did not know that any of his cases of ovariotomy had landed on Blackwell's Island. He hoped Dr. Field would publish those cases referred to, of insanity following removal of the ovaries, together with the names of the operators.

DR. FIELD said he did not know that it was proper to mention the names of the operators, but, since Dr. Wylie had requested it, he would state that of the five cases which had come to the asylum the past year one had been operated upon by Dr. Wylie; one by Dr. Lusk (although rather against his own advice); one he had already mentioned as having been operated upon twice, and left in a worse condition of insanity than before; one was operated upon in England; in the other case he did not recall the name of the operator. It would be difficult to get at the history of the thirty or forty cases prior to that time, and he thought really the less said about them the better; the reaction seemed to be taking place, anyway.

DR. DANA was glad to hear such unanimity of opinion expressed by those present. It was not what he had expected after a perusal of gynecological literature.

OHIO STATE MEDICAL SOCIETY.

Forty-fourth Annual Session, held at Youngstown, May 22, 23, and 24, 1889.

AN address was made by DR. JOHN MCCURDY, President of the Committee of Arrangements, welcoming the Society to Youngstown. Secretary Collamore's report showed a membership of 576, and a decrease of eleven county societies in the State. A report on legislation for the protection of physicians from malpractice suits was made by Dr. Connor, of Cincinnati, and referred to a committee. On recommendation of the Finance Committee the dues were made $2, and the salaries of the Secretary and Treasurer were increased from $75 to $125 per annum.

Election of officers resulted as follows: *President*—Dr. John McCurdy, of Youngstown; *First Vice-President*—Dr. W. J. Conkling, of Dayton; *Second Vice-President*—Dr. A. W. Ridenour, of Massillon; *Third Vice-President*—Dr. C. W. Tangeman, of Cincinnati; *Fourth Vice-President*—Dr. J. E. Woodbridge, of Youngstown; *Secretary*—Dr. G. A. Collamore, of Toledo; *Assistant Secretary*—Dr. E. C. Brush, of Zanesville; *Treasurer and Librarian*—Dr. T. W. Jones, of Columbus. Columbus was chosen as the next place of meeting, the first Wednesday in June, 1890.

Dr. Orpheus Evarts, of College Hill, O., read a paper on "The Natural and the Supernatural in Medicine." Dr. Henry S. Upson, of Cleveland, read a paper on "Localization in Diseases of the Spinal Cord." Dr. Rufus B. Hall, of Cincinnati, read a paper on "Abdominal Section for Inflammatory Diseases." Dr. J. A. Battles, of Youngstown, read a poem entitled "The Physician and Surgeon," and was asked to write another for next year. A few observations on the "Etiology, Prognosis, and Cure of Incipient Cataract, without Operative Interference," was the subject of a paper by Dr. A. R. Baker, of Cleveland. "Injuries to the Head," was the title of a paper by Dr. G. M. Allen, of Cleveland. "Pressure as a Remedial Agent," was the subject of a paper by Dr. John McCurdy, of Youngstown. "Intestino-vaginal Fistula," was the subject of a paper by Dr. R. A. Vance, of Cleveland; and "Trephining," by Dr. George Goodhue, of Dayton. "Modern Theories of Tubercle and Therapeutic Tests," was the subject of a paper by Dr. H. J. Herrick, of Cleveland.

DR. A. B. THRASHER, of Cincinnati, read a paper entitled

LARYNGEAL PHTHISIS.

He said it is established beyond a reasonable doubt that at times this is a primary affection. While the rule remains that the lungs are generally affected either with or before the larynx, yet Demme's case has disproved the statistics of Heinze, as tubercular disease of the larynx was found in death from tubercular meningitis. The special reason for invasion of the larynx was thought to be due to a weakened condition of the organ from abuse of the voice, either by improper method, over-use, or by using the voice in a bad atmosphere. The theory of specific infection by the Koch bacillus would scarcely hold good, as if the bacilli were inhaled the nasal mucous membrane should be more frequently affected. If it were exhaled from the lungs or carried out in the sputa, the surface of the mucosa would be first affected, while, as a matter of fact, the tubercular disease first began below the surface.

In uncomplicated cases Dr. Thrasher thought the laryngoscopic examination would establish the diagnosis. Small multiple ulcers, with ragged edges, on the undersurface of the epiglottis, the edges of the vocal bands or over the ary-epiglottic folds, on a pale, œdematous surface would mean tubercle. Pale thickening of the free edge of the vocal band or of the tissue over the arytenoids, this latter assuming a pyriform shape, implies tubercle. In syphilis the ulceration is on the buccal surface of the epiglottis—one large ulcer, surrounded by highly inflamed tissue, with involvement of cervical glands; in cancer, one ulcer on the apex of a tumor, usually on the ventricular band, preferably the left one, with marked redness of larynx and pharynx.

The general treatment does not differ from that of phthisis pulmonum — locally, lactic, chromic, or acetic acid to the ulcers, or, preferably, the galvano-cautery; cocaine, menthol, morphia, by spraying solution in vaseline during inhalations. By these means the patient is able to take food and is free from much excruciating pain which accompanies the last stages.

DR. MAX THORNER, of Cincinnati, read a paper entitled

CHRONIC THROAT AFFECTIONS OF RHEUMATIC ORIGIN.

Chronic painful affections of the throat, pharyngitic as well as laryngitic, are sometimes due to rheumatism. These cases are usually very obstinate and resist every treatment except that which is directed against the diathesis. The symptoms are pain in or about the throat; in pharyngeal affections the pain is mostly located in the regions of the fauces and tonsils, and sometimes as far down as the hyoid bone. If the larynx is concerned, there is localized pain in and around the larynx; the whole region about the larynx and the upper part of the trachea may be painful to pressure; some tender spots are always present. The pain is intermittent, and patients suffer more during changeable weather. Locally there is more or less congestion, which is sometimes circumscribed and limited to small tender spots. In rare cases congestion may be absent. Neither ulceration nor swelling is found in the throat. The general health of the patients remains undisturbed, unless they suffer at the same time from other manifestations of rheumatism.

The diagnosis must be based on the history of the patient. Sometimes rheumatic sore-throat is found in people who have never suffered from rheumatism, but in the majority of cases this disease can be traced among their former ailments. The treatment for this affection must be chiefly that for rheumatism in general: local applications may assist in the treatment, but can never alone

effect a cure. Salicylate of soda, salol, oil of wintergreen, phytolacca, and iodide of potassium are of special value. Sometimes hot applications, and the faradic or galvanic current, are very effective in producing relief. One case, a lady of pronounced rheumatic diathesis, was not amenable to treatment until she had spent several weeks at the Hot Springs in Mount Clemens, Mich., whence she returned cured. Chronic rheumatic affections of the throat are found more frequently in men than women. Relapses are common.

Dr. J. C. Reeve, of Dayton, presented a paper entitled

THE EARLY DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.

It was based upon a careful study and annotation of the symptoms present in a large number of reported cases, and was prepared with the object of directing the attention of general practitioners, into whose hands the majority of these cases fall, in order that relief may be afforded in time. The symptoms were individually considered and classified as: 1, Suggestive; 2, presumptive; 3, certain. By attentive study of these a diagnosis could generally be made, although in some cases the difficulties were insuperable.

The subject of treatment was only considered to show how the advocacy of different methods had led to undue depreciation of the possibilities of a diagnosis at an early period.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 9 to June 15, 1889.

Hartsuff, Albert, Major and Surgeon. Relieved from duty at Fort Hamilton, N. Y., and ordered to Fort Omaha, Neb. Par 9, S. O. 136, A. G. O., Washington, D. C., June 13, 1889.

Brown, J. M., Major and Surgeon. Relieved from duty at Fort Omaha, Neb., and ordered to Fort Meade, Dak. Par 9, S. O. 136, A. G. O., Washington, D. C., June 13, 1889.

Shannon, W. C., Captain and Assistant Surgeon. Relieved from Fort Meade, Dak., and ordered to Fort Yates, Dak. Par 9, S. O. 136, A. G. O., Washington, D. C., June 13, 1889.

Ives, Francis J., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort D. A. Russell, Wyo., and ordered to Fort Lyon, Col. Par 9, S. O. 136, A. G. O., Washington, D. C., June 13, 1889.

Philips, J. L., Captain and Assistant Surgeon. Relieved from duty at Fort Lyon, Col., and ordered to Fort Crawford, Col. Par 9, S. O. 136, A. G. O., Washington, D. C., June 13, 1889.

McCaw, Walter D., First Lieutentant and Assistant Surgeon. Relieved from duty at Fort Crawford, Col., and ordered to Fort McPherson, Atlanta, Ga. Par 9, S. O. 136, A. G. O., Washington, D. C., June 13, 1889.

Gibson, Robert J., Captain and Assistant Surgeon (Fort Trumbull, Conn.). Designated as medical officer for the encampment at Fisher's Island, N. Y., and to proceed to Fisher's Island, N. Y., August 1, 1889, and report to the commanding officer for duty at that post. Par 5, S. O. 133, Headquarters Division of the Atlantic, June 13, 1889.

Gandy, Charles M., Captain and Assistant Surgeon. Upon the abandonment of the post of Fort Concho, Tex., will report in person to the commanding officer, Fort Clark, Tex., for duty at that station, to relieve First Lieutenant Ogden Rafferty, Assistant Surgeon, reporting also by letter to the Commanding General, Department of Texas. Par. 7, S. O. 133, A. G. O., Washington, June 10, 1889.

Rafferty, Ogden, Lieutenant and Assistant Surgeon. On being relieved by Captain Gandy, will report for duty to the commanding officer, San Antonio, Tex., reporting also by letter to the Commanding General, Department of Texas. Par 7, S. O. 133, A. G. O., Washington, June 10, 1889.

Wales, Philip G., First Lieutenant and Assistant Surgeon (recently appointed). By direction of the acting Secretary of War, will proceed from this city to the Presidio of San Francisco, Cal., and report for duty to the commanding officer of that post, reporting also by letter to the Commanding General, Division of the Pacific and Department of California. Par 3, S. O. 132, A. G. O., June 8, 1889.

Official List of Changes in the Meaical Corps of the United States Navy for the week ending June 15, 1889.

Morton, O. D., Assistant Surgeon. Ordered to the Naval Hospital, Chelsea, Mass.

Hall, J. H., Passed Assistant Surgeon. Detached from the Naval Hospital, Washington, D. C., and granted six months leave to go abroad.

Lewis, D. O., Passed Assistant Surgeon. Detached from the Naval Academy and to Hospital, Washington, D. C.

Bright, George A., Surgeon. Detached from the Navy Yard, Norfolk, Va., and wait orders.

Marmion, R. A., Surgeon. Detached from the Receiving-ship Franklin, and to Navy Yard, Norfolk.

Bertolette, D. M., Surgeon. Ordered to the Receiving-ship Franklin.

Kidder, B. H., Medical Inspector. Ordered to the Naval Academy, Annapolis, Md.

Walton, T. C., Medical Inspector. Detached from the Naval Academy, and to the U. S. S. Chicago.

Beyer, H. G, Passed Assistant Surgeon. Ordered to the Training-ship Portsmouth.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending June 15, 1889:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	16	4
Scarlet fever	129	26
Cerebro-spinal meningitis	8	6
Measles	98	8
Diphtheria	132	50
Small-pox	1	0
Yellow fever	0	0
Cholera	0	0

Soluble Phosphate of Iron (*Journal de Médecine de Paris*).—Jolly has published an article showing that iron only exists in the blood under the form of phosphate. The following are his conclusions: The success of treatment by iron, other than phosphated, is subordinate to the richness of the organism in circulating alkaline phosphates; but as no indications can instruct the physician as to the amount of phosphatic alkali in his patient, he can only count upon the benefit of ordinary ferruginous medication. In such case, is it not reasonable to prefer a phosphated preparation of iron? M. Ch. Lecerf takes the same view as M. Jolly; and three years ago, at the request of Dr. Viry, he undertook the discovery of a soluble preparation of iron, of constant composition, and capable of being easily assimilated. It is known that the phosphates of iron are insoluble; they are only absorbed

through the intervention of the acids of the stomach, which are thus diverted from their special functions to promote the transformation and digestion of food. These conditions of decomposition are not peculiar to the phosphates; they exist for all insoluble preparations of iron, and their prolonged use nearly always induces digestive difficulties. The salts of iron which least affect digestion are those which are soluble in acids of organic origin; but these preparations are only rendered soluble by the decomposition of oxide or of pyrophosphate of iron in the tartrates or citrates of ammonia or potash. These oxides or phosphates of iron are dissolved in a moist state immediately they are precipitated; the solutions thus obtained are dried on glass plates, and supply the flakes which are usually found in commerce. This brief glance at the mode of preparing these iron compounds shows how difficult it is, if not impossible, to obtain products of a stable composition. It became, therefore, desirable to find a ferruginous preparation which should possess always identical properties. In Dr. Lecerf's researches he only studied the phosphates, being convinced of their value in anæmia, and of their superiority over all other salts, provided that it was not necessary to borrow materials for their solution from the organism. He found that there exists a combination of iron with citric acid which is very soluble in water, the solution having a neutral reaction on litmus-paper. This ferruginous citro-phosphate crystallizes in very small crystals belonging to the fourth system, and assumes a rhomboid or hexagonal form. They are slightly raised tablets or lozenges, or in which the angles terminating the longer axis are more or less truncated. This salt, the composition of which does not vary, owing to its crystalline form, offers as a phosphate a peculiarity which may be usefully noted, for it is a rare exception. Generally the ammoniacal citrate is used as a solvent for salts of iron, and all soluble phosphates may be dissolved in this agent. The salt described, although soluble in water, is very slightly so in the citrate of ammonia, and, if solution is effected by heat, is precipitated when cold. Dr. Lecerf believes that this new salt will prove serviceable in cases where iron is indicated. He adds that this salt, which he has taken himself and prescribed for many others, does not produce constipation.—*The Provincial Medical Journal*, May 1, 1889.

Syphilitic Fever.—Professor Fournier presented a patient at his clinic recently who illustrated one of the rare forms of syphilitic fever which has received the name of typhose syphilitique, so closely does it resemble typhoid fever. Syphilitic fever, although so long denied, is nevertheless very frequent, especially in women. The author has observed it in no less than one-third of the cases at the Lourcine Hospital. Symptomatic fever is not very common, for most lesions appear without febrile movement. However, an eruptive fever of invasion may appear with the roseola or papular syphilide. Essential fever is much more frequent, and presents two features important to know. First, it belongs to the secondary period, and especially to the first months of this period; and, secondly, it is much more common in women. The varieties of this fever are numerous, and marked types exist, such as the intermittent, irregular, and continuous. The intermittent is one of the most common types. The initial stage is often absent as well as the sweating stage. Only simple shiverings are noted, followed by a stage of heat and a terminal stage of moisture. It ordinarily occurs at evening or in the night, and the spleen is not affected. The intermittent form passes away the most quickly, but may last as long as three months. It is the form which gives way most readily to mercurial treatment, while quinine has no influence upon it. The continued form is, perhaps, more important because of the errors of diagnosis which it is likely to cause. The temperature is usually moderate, but in some cases may reach or exceed 104° F. The duration may be only a few days, but it may also last for several weeks, or even fifty days. Thus in these cases, contrary to the current opinion, syphilis may become a pyrexial disease. In syphilitic fever digestive troubles are very slightly marked, while in simple continued fever they are the predominant symptoms; besides, the tongue has a peculiar aspect and the fever does not last over a week. Between this and typhoid fever the diagnosis is still more important. The differential signs are mostly negative; there is absence of epistaxis, and the character of the facies is simply adynamic without stupor. There is absence of tympanitic enlargement of the abdomen, gurgling in the iliac fossa, diarrhœa, sibilant râles in the chest, enlargement of the spleen (except in rare instances), and the characteristic spots appearing on the seventh or eighth day. A peculiar phenomenon occasionally observed in syphilitic fever is that of boulimia coincident with the fever. Prognosis in the prolonged form of fever has a certain importance, for it leads to denutrition, anæmia, and a general atony from which it is difficult to relieve the patient. As regards treatment, mercurial ointment is advised in doses of four grammes at each friction for an adult. This quantity can be increased after a few days to six or eight grammes, but this quantity must not be exceeded unless in very grave cases or where the treatment is being carried out at a sulphur-water cure. Sulphur-water favors the tolerance of mercury without our being able to say just why. Doyon has been enabled under these circumstances to use a daily quantity of twenty grammes of the ointment without causing salivation. Vigorous friction for almost a quarter of an hour, preferably at night, is required for the smaller quantity and a longer time for the larger dose. The region is then covered with a layer of cotton and adhesive straps and the ointment is left upon the skin eight or ten hours. Two starch baths a week are given. Professor Fournier condemns the practice of neglecting treatment in suspected syphilis in infants as long as they appear healthy. He believes that if the father alone is syphilitic, treatment is not indicated, for heredity under these circumstances is rare. If the mother has syphilis of long standing and has shown no signs during pregnancy, then, too, treatment may be omitted. If, however, the mother has recent syphilis, and especially if she has shown signs of it during her pregnancy, we must not hesitate to treat the child, even if it appears perfectly healthy. It is sure to become syphilitic, and should be treated energetically from birth.—*Journal of Cutaneous and Genito-urinary Diseases.*

Arsenical Pigmentation of the Skin.—Dr. W. L. Worcester, of Little Rock, Ark., writes: "Cases similar to the one exhibited by Dr. Leszynsky at the meeting of the New York Academy of Medicine, February 19, 1889, have been reported by Jonathan Hutchinson, I think, within the past two or three years. I am unable now to give the reference. I have had two cases of the kind in my practice at the Michigan Asylum for the Insane. One was a case of pernicious anæmia, which recovered under the use of Fowler's solution, and which is reported in the New York *Medical Journal*, May 5, 1888. In the other case the drug was administered for enlargement of lymphatic glands, giving rise to suspicion of Hodgkin's disease. In both cases there was deep pigmentation, which disappeared in a short time after the suspension of the arsenic. Such, I venture to predict, will be the result in Dr. Leszynsky's case."

A Prize for Cleanliness.—A winter resident at Green Cove Springs, Fla., has offered a premium of $1,000 for the city or town in Florida which, on July 1, 1889, shall present the most cleanly condition in public and private premises.

Overcrowding of the Profession.—A Western physician recently read a paper before a medical society, in which he argued that all that was necessary to prevent overcrowding of the medical profession was to adopt Henry George's land-tax theories.

The Medical Record

A Weekly Journal of Medicine and Surgery

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Society Reports.

American Medical Association.

FORTIETH ANNUAL MEETING,

Held at Newport, R. I., June 25, 26, 27, 28, 1889.

FIRST DAY, TUESDAY, JUNE 25TH—GENERAL SESSION.

THE meeting was called to order by DR. HORATIO R. STORER, Chairman of the Committee of Arrangements. REV. THATCHER THAYER, D.D., the senior clergyman of Newport, offered prayer.

HON. HERBERT W. LADD, of Providence, Governor of Rhode Island, delivered

AN ADDRESS OF WELCOME

to the Association from the people of the State. He stated that not often were doctors' visits greeted with a smile, but the present occasion was a pleasant exception to this rule. Rhode Island is proverbial for its hospitality, which the members would shortly experience. In conclusion, the Governor hoped that all would take away pleasant memories of Newport.

HON. JAMES H. ELDREDGE, M.D., of East Greenwich, ex-President of the Rhode Island Medical Society, and one of the oldest members of the American Medical Association in the State, gave a cordial welcome from the profession of Rhode Island.

PRESIDENT W. W. DAWSON, of Cincinnati, next delivered the

ANNUAL ADDRESS.

The late Premier, Mr. Gladstone, after quoting the statistician who estimates the English-speaking people at the close of the next century at one thousand millions, says, "What a prospect is that of many millions of people, certainly among the most manful and energetic in the world, occupying one great continent." This destiny in numbers is startling, but the assertion of Dr. Dollinger, a German scholar, portrays the culture of the future almost as strikingly when he says "that the intellectual primacy of the whole world is certain to fall to the Anglo-Saxon race." Most of that race will be in America.

Looking to such a future the position of the learned professions is certainly conspicuous—their obligations imperious. Medical men should be loyal to this grand destiny.

An eminent modern critic, in discussing civilization in America, while admitting that we have well solved the political and social problems, asks what have we done to solve the human problem, "the humanization of man in society." The struggle in his own country, he asserts, has resulted in "an upper class materialized, a middle class vulgarized, a lower class brutalized."

We trust that our efforts have yielded better fruit; and since medical science and medical men are prominent factors in society, among every people, we may well ask, what they have accomplished, what part they have here taken in the solution of the vital problem? In the "Century of Medicine," Professor E. W. Clark in his classical address says:

"It is not an extravagant assertion to say, that in all this turmoil, change, and progress (referring to the revolutions and changes in society, religion, and governments for the past century), medicine has kept abreast of the other natural sciences, of politics, and of theology, and has made equal conquest over authority, error, and tradition," and it may be added, has contributed largely to man's comfort, happiness, and advancement. To intensify this, reference need only be made to some of our triumphs, to vaccination, to anæsthesia, to sanitation, the prevention of pestilence, the lengthening of human life. It is, however, more especially the contributions of the profession in America to which attention is desired at this time. What are we doing in the humanization of man, in the work of civilization?

Are our medical practitioners and our medical teachers what they should be? We shall see. Criticisms abound concerning the defects of medical education. Those who do not condemn, often ridicule; these criticisms and strictures are made for the most part, it must be said, by gentlemen unacquainted with teaching, without any practical knowledge of the constitution of medical colleges, or of the toil, devotion, and sacrifice made necessary by those engaged in didactic and clinical instruction.

These censorious addresses are delivered before and to a body of professional gentlemen, the peers of any, some of whom have grown gray in the hard service, others are still in the prime of life, with reputations co-extensive with civilization. The rest are young, full of life and enthusiasm, fired with ambition to render loyal service to that profession which they have chosen. Can our system be so defective? The pessimistic orator seems to forget that he is the product of the system of medical education which he is so severely condemning. Some one has said, "By retrospection and introspection an individual, like a profession, may be benefited." In this self-examination we should have but one motive, the elimination of error, the development and support of truth.

Education cannot make all great or equal. It tends, however, to make all safe. In the crucible of private, practical life, evolution asserts itself and the fittest survive.

In making a retrospect of our profession it may be well to look for a moment at medical teaching in this country.

The way is long between Aristotle and Bichat, and Buckle says that he found no middle-man in this long period; it is darker than it is long. During all this time medicine was not taught legitimately. The renaissance, if it may be so called, began with Hunter and Bichat. No real progress, however, could be made while oxygen remained locked in the silent embrace of all organic and inorganic nature. Priestly, escaping from the religious and political contests, and it may be persecutions, of the old world, came to this country to demonstrate his great phlogiston, Oxygen.

Bichat and Hunter restored the proper study of medicine. They represent the turning-point from idealism, speculation, and theory to accurate and close observation. The latter, John Hunter, in 1767, was lecturing and taking students into his own house, and it is curious to know that here, in far off America, Shippen and his contemporaries in Philadelphia and New York, about the same time, or very soon after, began teaching medicine and surgery upon essentially the same plan. Of these men, one who so recently passed away that you can almost hear the sound of his voice and feel his magnetic presence, when speaking of the men who lived at the close of the last, and during the early part of this century, said, and justly said, "Not a few of them were the worthy

peers of Roux, Abernethy, Crampton, Bell, Graefe, and Scarpa."

To quote again:

"During the past century medicine has been enfranchised from superstition, *quasi*-charlatanism, bold empiricism, and speculation and has developed into a symmetrical science, affiliated with the other natural sciences, studied by the same methods and by the same appliances as they are, and like them has been planted upon the solid basis of fact and demonstration."

It may be profitable for us to inquire and determine what part the profession in America has taken in placing medicine upon the high ground which it occupies. What have we done, what are we doing, and what forecast can we make of the future?

At the close of the eighteenth century Boerhaave declared that all that had been learned up to that time was comprised in three propositions: "Keep the head cool, the feet warm, the bowels open." All other pages in the volume which he left were blanks. Many pages, however, it will not be denied, have been filled during the present century. What have been our contributions? Have they been such as to rank us with the acknowledged conservators of mankind?

In giving attention to this subject let us for a moment reflect upon the peculiar position of the profession and of medical teaching in this country. For many years (and even now), with few exceptions, medical colleges were the creation of the members of the profession, most often of the faculties composing the schools, without endowment —indeed, it may be said that almost everything on this continent is endowed, except medical colleges—without Governmental aid, depending for their support upon the sacrifice of time and money on the part of the gentlemen occupying the chairs. Yes, not only without patronage from the Government, but society, from some unknown cause, has ever been against legitimate medicine, depending upon the scientific physician in time of trouble, yet in the interim openly supporting all sorts of shams, frauds, and impostors.

Elsewhere, college work is provided for by the State; especially laboratory investigations—the nature and the genesis of disease. Hence it is not strange that in such departments we may not be so far advanced as our European brethren, but while they have been engaged in experimental studies we have developed the practical. Everywhere is seen among us an earnest, a burning desire for higher culture, for more exact and accurate knowledge. Especially is this true of our younger members and of those about entering the profession.

A movement is being made to concentrate those who have had preliminary advantages—those who enter the profession as college-bred. No objection can be urged to this if it be not too exclusive. All efforts, in fact, to refine our profession without emasculating it, should meet with judicious approval.

THE PHYSICIAN OF THE FUTURE.

Whence are medical students to come? What facilities are now afforded, and what does the future promise for the education of our young men, the class from which the medical student, the "coming doctor" is to be selected? The answer to this question will give some comfort, we trust, to the pessimist and soothe the restless and at times unreasonable critic. And now as to our resources for this work.

By the last census it was shown that nearly four thousand institutious—schools for higher learning—existed in the United States, and that nearly four hundred of them ranked as colleges and universities. In these are massed, yearly, nearly sixty thousand pupils. They, together with two hundred thousand common, or primary schools, in the higher grades of which the curriculum nears that of many colleges at home and abroad a third of a century ago, may be looked upon to supply, year after year, a better material from which medical students will be drafted.

Professor Charles W. Eliot, in his beautiful and forcible centennial response, enumerated our educational facilities more generously. He painted our future more hopefully when he spoke of the eight million children in elementary schools, two hundred and fifty thousand in secondary schools, sixty thousand in colleges, with three hundred and sixty thousand teachers to train and develop them.

Everyone travelling through the States—especially of the West and South, and those situated in the far away mountains, and on the Pacific—must be impressed with the onward march of public instruction, the gradually increasing general intelligence, and the vast sums that are annually expended for the education of the people. Public school buildings, by their size, adaptation, and attractive surroundings, give an impression which the most sceptical must feel, a promise of the future which cannot be misread. From such as these, scientific medicine must reap a share. Every teacher, everyone connected with the examination of candidates for the medical degree, knows—and the knowledge is reassuring—that year after year the grade of the medical student is advancing, that the material out of which the practitioner is made is constantly growing better, becoming stronger—in other words, that the preliminary education of our students is steadily becoming more broad and comprehensive. I gave utterance to this view a few years ago, in an address which I had the honor of delivering to the State Medical Society of Ohio. Time, I believe, has confirmed what I then said. This confirmation is seen in our graduates as they go forth to take up the line and battle of life. Are they not the equals of the graduates in other professions, in law and theology? As life advances, are they not the peers of any in all the useful elements of true manhood? Are they not the citizens of best rounded characters, citizens most relied upon by their neighbors in foul as well as fair weather?

Again, in addition to facilities already referred to, the most generous provisions are being made, all over our land, for institutions which will be worthy to be called universities. From these, graduates will emerge, worthy to rank by the side of those bearing the prized degrees from Oxford, Cambridge, Paris, Heidelberg, or Leipsic.

During the summer of 1888 I witnessed the beginning of a university in California, which in scope and equipment will surpass, probably, any school upon the continent. Should Governor Stanford live to develop his conceptions, that far-off State will have an institution of which not only the Pacific Coast, but our entire country, yes, all civilization, will feel justly proud. It may be so liberally endowed that it will command the best abilities of the world.

Of course, upon such an occasion as this it would hardly be expected that I should, in detail, refer to the many liberal donations and bequests which have been made by generous citizens for developing higher culture —more comprehensive education. I will, however, be pardoned for referring to a few, and I may say, without being too enthusiastic, that the future is aglow with promise. The high-hearted examples which have been set will be followed by other favorites of fortune, until this country may surpass the world, not only in common schools, but in her institutions for broader and deeper education.

In looking at this promising future may we not hope that before another half century closes students from the old world will flock to this, to sit at the feet of the wisdom here installed? Is it too much to hope that, in the not far-off future, the preliminary education of our students will be equal to that required in the best schools of the world?

Defective as has been much of the material, yet have we not produced some marked results? Our best are equal to the best anywhere; mediocrity always and everywhere finds its own. The poor in medicine, the weak brother, however much we may deplore him, however

much we may train him, we have, like the poor, always with us. This is the lot of humanity in all lands, among all peoples, new or old.

A word as to the physical qualities of "the coming doctor." Recently a distinguished foreign traveller, in speaking of our educational facilities and national peculiarities, said: "Students are much calmer than their colleagues in Europe. They don't at all trouble themselves about politics, or affairs outside their line of duty, and, with the practical sense which animates the nation, they try to make the best use of their time. They fight no duels, and it is only for health and recreation that they take part in various sports and games." These remarks apply with equal, in fact, with greater force, to medical students.

It is to the country schools, not the city-bred, that medicine must look for many of her strong recruits. Cities too often emasculate—young men are vitiated by indulgence and vice before they become possessed of serious thoughts, before they realize the elements of a healthy, vigorous life. It is this country-bred, this excellent material which is, as we have seen, yearly growing better and better qualified to enter upon the duties of the profession. From these we must look for the men of distinction, the leaders of the future.

Is this picture overdrawn? One word more. In many of the States of the Union, in addition to the liberally supported free schools and schools for higher education, already colleges have been established through the munificence of the General Government, in which the degrees of A.B. and A.M. may be obtained. They are absolutely free colleges, at which the poorest boy in the commonwealth may receive a classical education. And here, you will allow me to say, we can not insist too strongly upon the necessity of classical education; without it the medical man must ever be at a disadvantage. Without a knowledge of Latin and Greek sure and distinguished success is uncertain. The student may neglect algebra, and the higher mathematics, but let him, by all means, have a liberal knowledge of languages.

At the last commencement of one of our Western schools, "forty per cent. of the graduating class had been admitted on diplomas from literary or scientific colleges; the balance of the class had received from one to five years of academic or collegiate instruction." This college is without endowment—depending entirely upon the learning, devotion, and sacrifice of the Faculty.

But to return. Prominent among the States in providing institutions for advanced culture, the great frontier State, Texas, claims a high position. The University of Texas will be one of the most liberally endowed; millions of acres of land have been donated for university purposes. There, in that Empire State, may yet be seen one of the greatest schools of literature, science, and philosophy on the Western Continent. The University of Virginia, projected in the early days of the century, by her great commoner, Thomas Jefferson, has yearly sent forth graduates equal in all the elements of advanced scholarship to those from any school. This may seem high praise, but the records of her alumni justify me. The same may be said of Harvard, Yale, Princeton, Columbia, Cornell, and of most of our older institutions. The University of California has already an annual revenue of about two hundred thousand dollars. The Michigan University, with a yearly income of almost a quarter of a million of dollars, has well nigh two thousand students, taught by more than one hundred teachers.

Let us not, gentlemen, be impatient; the influences are already projected that will give us students equal to—up to—the highest standard of preliminary preparation. If we have accomplished so much in our primitive stage, what may we not expect when all our great preparatory works come fully into action?

From this view of the resources from which medical students are to be drawn, and of the liberal preparations and facilities for their culture, we may well ask, what is the profession doing to profit from such advantages?

Some of the classical schools at Oxford and Cambridge were organized as early as the thirteenth century, but the systematic, scientific study of medicine and surgery came long subsequently—not four hundred years later—about the middle of the eighteenth century. It was first projected in Great Britain, and soon after in our Atlantic cities. Unlike the Old World, our fathers had a wilderness to conquer before progress could be made. When the Pilgrim Fathers left England, reading and writing were rare accomplishments; chimneys in that country had just been invented, and flock beds were luxuries. The adventurers—the emigrants to these shores from that ancient and imperfect civilization—had much to learn, but in the midst of their pitiable ignorance, facing great hardships and pressing wants, they were quick to provide educational opportunities for all. The result of their efforts are apparent—they are before us. Could more have been accomplished in one century?

MEDICAL SCHOOLS.

Our medical colleges now number a few more than one hundred. They may be classed as: 1, Metropolitan, those in large cities; 2, medical colleges in less pretentious cities; 3, medical colleges in small cities; 4, State medical colleges. For convenience, however, we may speak of them as metropolitan and provincial.

Before speaking more definitely of our medical institutions allow me to refer for a moment to the proposition, that medical schools in our country have been developed by the labors, by the self-sacrifice of the profession. As previously stated, it may be said that in this country everything is endowed except medical colleges, schools for teaching medicine. Yes, all financial responsibilities have been and are assumed by the faculties, by men who give every hour not devoted to "earning the guinea" to college work, and, in most instances, without pecuniary reward. It is only recently that the wise, the generous, the favorites of fortune, and a few of the States have conceived the idea of endowing medical schools, institutions where medicine and surgery can be cultivated without the embarrassments of financial responsibility. In the presence of such facts the work of the grumbler seems indeed ungracious.

In our metropolitan colleges every physician may feel a just pride; their graduates, most of them, will compare favorably with those educated anywhere on this earth.

The accomplished Dr. Senn, after a liberal experience with foreign schools, said: "There is no question in my mind that the average American student learns more in one month than the average German student in three. He learns more, not because he has better teachers or better facilities, but he makes better use of his time. I am satisfied that in our last graduating class I had at least a dozen students who, after studying three years, would pass a brilliant examination in any English or German university. They would have felt at home even in a dress coat in Volkmann's clinic, passing their final examination."

Provincial schools do praiseworthy, yes, thorough work in training young men, not only in rudimentary branches, but in practical, clinical studies. Many supplement these by hospital attendance in the great cities and by post-graduate courses. It is gratifying to know that these organizations are being established in all of the great medical centres.

The advance in medical education is again most distinctly pronounced by a remark recently made by one of our distinguished fellows, an American-bred physician, of whose fame we are all justly proud. In a conversation, Dr. Battey said: "When I began to practice, thirty years ago, there was scarcely a graduate within fifty miles of my residence; now, however, there is hardly a practitioner in the same territory who is not a graduate, and, year after year, a portion of our young men leave home to avail themselves of clinical advantages, to attend post-graduate instruction."

Could anything show more forcibly the conservative and steady growth of medical culture?

HAVE MEDICAL COLLEGES INCREASED TOO RAPIDLY?

Should they be established in small cities where clinical material is limited, where it must be comparatively scarce? Before answering this it may be well to reflect upon the proposition, that in our own country, as well as elsewhere, great achievements have often been made in the provinces and not always under the shadows of the universities. One of the great operations waited for years for a metropolitan disciple—one to take it up—and that too, long after the provinces, at home and abroad, had demonstrated its vital utility, its claim upon the scientific and skilful surgeon.

As our population increased from three to sixty-five millions, the demands for medical men were great—colleges increased necessarily. Have they multiplied in undue proportion?

In answering this question, I beg again to quote from my beloved master, Samuel D. Gross, to whom this question had been put. After mature deliberation, he said: "Our colleges are not annually graduating one physician for each county in the States and Territories. This is certainly not exceeding the demand." A considerable proportion of those who graduate never enter the ranks—death and desertion claim a large share. It would simply be impossible for the metropolitan schools to graduate all required.

For the introduction of young gentlemen into the profession there is a mutual responsibility between teachers and preceptors. In very truth it may be said that colleges do their duty, their very best, with the students furnished by the preceptors. Give us liberally-educated young gentlemen and we will furnish graduates worthy of the degree. Medical colleges, however, do not make the physician. They merely furnish the foundation work; the individual must do the balance. In no place is evolution so marked—the fittest will and should survive.

LABORATORY WORK.

Huxley says: "The microscope extends the realm of pathological anatomy to the limits of the invisible world."

"The intimate alliance between morphology and medicine has made the natural history of disease attain a remarkable degree of perfection."

Dr. George M. Sternberg, the distinguished pathologist, recently connected with the Smithsonian Institute, in referring to some of the laboratories established in this country for the study of pathogenic micro-organisms, says: "It is no longer necessary to go abroad for instruction in this department of science, since the laboratory of Professor Welsh, in Baltimore, and the Hoagland Laboratory, in Brooklyn, afford facilities which are unsurpassed by any of the laboratories of the old world."

Indeed, it may be said that provisions for the study of pathogenic micro-organisms are established in most of the leading schools of this country—in New York, Philadelphia, Boston, Baltimore, and the cities of the West and South.

You will pardon me for mentioning some of the investigators.

Johns Hopkins University has for its director, Professor William Welch. The Hoagland Laboratory, of Brooklyn, N. Y., established through the generosity of Dr. C. N. Hoagland, has been built and equipped in the most complete manner for research work in bacteriology and experimental pathology. Professor George M. Sternberg is to be the director of this advanced institution.

At the University of South Carolina, Dr. Meade Bolton, who has had the best of training at Berlin and Göttingen, is at the head of a laboratory. Dr. H. C. Ernst has the direction of a bacteriological laboratory in connection with Harvard School of Medicine.

Professor James T. Whitaker, who had the honor of being the first American student of Robert Koch, demonstrated, at Cincinnati, in 1882, the tubercle bacillus, after a lecture upon the subject before the Philadelphia Academy of Medicine. In 1887 the Medical College of Ohio imported a complete outfit for bacteriologic study. The conductors of the laboratory, Drs. Rachford, Cameron, and Freeman, during the first course, had the opportunity of doing some good work in the discovery of the typhoid bacilli in the reservoir supplied from the Ohio River, then at a very low stage. This discovery led to the general adoption in the city, as advised by leading physicians, of boiling all drinking-water, a plan which undoubtedly limited the spread of the disease.

Among others may be mentioned Dr. Prudden, of the College of Physicians and Surgeons, of New York; Dr. Geo. A. Kemp, of Brooklyn; Dr. Mall, of Baltimore; Dr. Booker, of the same city; and Dr. Frank S. Billings, of Lincoln, Neb.

One of the earliest, most accomplished, and accurate cultivators of micro-organisms is Dr. James E. Reeves, of Chattanooga. His technique is singularly beautiful. Many of his preparations are to be found in the National Museum.

Dr. Victor C. Vaughan and Dr. Heneage Gibbs conduct laboratory work at Ann Arbor.

The University of Pennsylvania has at the head of its laboratory Dr. John Guiteras, a pathologist who has distinguished himself in the study of the origin and spread of yellow fever.

Thus it will be seen that in all parts of our country—East, West, North, and South—laboratories are being established for original work.

HISTORY OF MEDICAL TEACHING IN THIS COUNTRY.

A brief review of medical teaching in this country will be pardoned—it may be profitable—it will certainly illume the present, and may be somewhat of interest to the future.

The first medical lectures were delivered by Dr. John Morgan and William Shippen, in 1767, in Philadelphia. Dr. Rush and Dr. Physic soon after participated, and in 1768 the medical department of the University of Pennsylvania was organized, that great school which is steadily advancing to the highest station. Philadelphia was a small, a provincial city at that time; now she is only second to the great metropolis in numerical strength, but second to none in the thorough equipment of her medical schools.

Contemporaneous with Philadelphia, an organization was projected for medical instruction in New York. In 1767 the first steps were taken which resulted in the school ever since known as the College of Physicians and Surgeons, one which challenges the confidence of all. The medical colleges of New York, endowed, not by Government, but by her public spirited citizens, have won the honors which they wear so well.

In 1785 the first school was organized in Boston. The chairs were four, and the session four months. Harvard is the outgrowth of this humble beginning of that provincial faculty.

In 1800 the first medical instruction was given in Baltimore; since then the schools of Maryland have occupied a deservedly high position. Recently one of her citizens made an endowment by which the Johns Hopkins University will be equipped for the most thorough work, experimental work, laboratory studies, a range and grade of investigations *en rapport* with the spirit of the times.

This great benefactor has also given to Baltimore one of the most completely equipped hospitals to be found on this earth.

The great Mississippi Valley was yet unknown, but soon after the close of the Revolution emigration began, and, as early as 1799, Dr. Samuel Brown organized the medical department of Transylvania University. Dr. Benjamin Dudley effected a reorganization in 1819. This school, after many prosperous years, having graduated men who acquired distinction at home and abroad, was transferred,

or rather most of the faculty removed, to Louisville, when and where the University of Louisville was founded.

During the early part of the century, medical schools were organized in several of the Eastern States, usually under State or Church patronage. Most of them exist to-day. Some of the most distinguished men in our profession have been associated with these institutions.

As the West and South were peopled, medical schools were established in cities and promising towns. As early as 1819, Dr. Daniel Drake secured the charter of the Medical College of Ohio, and had it legally connected with the City Hospital. The faculty constituted the hospital staff, the members of which were required to give clinical lectures—the first forward step on the continent in blending didactic with clinical instruction.

The physicians in South Carolina began medical teaching in 1823, and those of Louisiana in 1835. In both of these States schools of high character have been maintained.

In closing this very brief review of our colleges, metropolitan and provincial, I think it may be said that year after year the standard of the doctorate is being elevated, preliminary examinations and graded courses are being adopted; the smaller schools—to which most blame is attached, whether justly or not—with a disregard of self-interest seldom seen, are yearly reducing the size of their classes by insisting upon higher preliminary education, by extending the curriculum, and by graded instruction.

MEDICAL JOURNALS.

Medical journals, metropolitan and provincial, are the heralds, the vanguard of medical progress, the exponents of professional culture. They are closely associated with the colleges in education and in post-graduate instruction. In them appear the best thoughts of the best men; they constitute the great forum of intellectual combat; upon their pages pretension is analyzed and estimated, and worth recognized; that which is new or original is endorsed, or rather encouraged; it is only the plan, the original investigation which is endorsed; the results, the conclusion must be subject to the crucible of test and trial.

The London *Lancet* and *The American Journal of the Medical Sciences* were almost contemporaries—who can over-estimate their value, their influence on medical progress. While our journals, both metropolitan and provincial, are freighted with the best thoughts of the best men, yet, it must be confessed, that trash and light material—very light material—may be found in all; but the reader, nevertheless, will find much that is not worthless.

The *Journal* of this Association has won its way to its present high position by its dignified course and its essential scientific character; but has it reached its full usefulness? A learned and distinguished author, and a highly-prized fellow of our Association, at my suggestion, gives his views upon this question.

Dr. Comegys says: "The undertaking, seven years ago, to establish a weekly journal, was a happy conception and has been carried on as successfully as the resources of the Association would admit. To Dr. N. S. Davis unstinted praise is due; proportionate praise is also due to the Board of Directors with whom he has been associated.

"A large number of the members believe that it is entirely feasible to enlareg the *Journal* and give to it increased capacity for usefulness; indeed, that it should be made more fully capable, as the organ of the Association, to assert and maintain the dignity and power of the medical profession as one of the greatest factors in civil life; that to it society must ultimately turn to find, not only the resource to assuage the distress arising from the diseases and accidents of life, but as to its protection from all those evils that fill the land with apprehension of desolation and ruin.

"We know to what an immense extent we can estop the approach of the pestilences that desolate lands and which menace, through the paths of commerce, the whole area of civilization. We know what we can do to improve the homes and places of labor of the lower and toiling classes of cities and other crowded centres of population. There is nothing, indeed, connected with our own social state, which the medical profession should not supervise, and which it should not have the power to control. A great organ is necessary to enlighten, strengthen, and lead the profession in all directions to bring to bear its beneficent agency for the correction of the terrible evils of society.

"Such a journal must be made encyclopædic in character, in which can be found the proceedings of distinguished societies of this country and of Europe, the work of the chief actors of medical progress in all parts of the world. Twelve thousand subscribers would give $60,000, this would insure $40,000 from advertisements, making an income of $100,000, which would sustain one of the grandest journals in the world.

"The *British Medical Journal* in fifteen years has fourteen thousand subscribers, and an income of $125,000. May we not hope to reach this? and when we do, who can compass the good which the American Medical Association will accomplish?"

THE MEDICAL AND SURGICAL LIBRARY AND MUSEUM AT WASHINGTON.

Another important factor in professional culture is the great Library and Museum, at Washington, evoked by the efforts of an American bred physician, John S. Billings. The Library of the Surgeon-General's office of the army now contains 92,000 volumes, and 137,000 pamphlets, being the largest collection of medical literature in the world, and it is not only the largest, but the most useful. This is because it has an "Index Catalogue," which not only shows what the library has of the works of any author, but, for any given subject, indicates all the original articles in journals and transactions, as well as the books and pamphlets which relate to it, and thus forms a medical bibliography which saves an enormous amount of time and labor to those engaged in medical literary research. This catalogue is being published at the rate of one volume a year, nine volumes have been issued, and six more will complete the work. The Army Medical Museum is a great pathological school, and now contains over fifteen thousand specimens, being one of the eight largest museums in the world, and richer than any other in illustrations of military medicine and surgery. This Library and Museum are national in scope and character. They have at last been securely placed in a fire-proof building, well adapted to their needs, thanks to the efforts of the medical profession, and we should see to it that they are maintained and increased to the highest degree of completeness and efficiency.

The medical profession asks very little of the general Government, but it does ask that these two institutions shall be made as useful as possible. The number of copies of the "Index Catalogue" which Congress authorizes to be published is hardly sufficient to meet the demand, and the repeated requests for authority to publish an illustrated catalogue of the Museum for distribution to the profession, have not yet received any attention from Congress, and it is time we took the matter in hand. When we, who are the family physicians of our senators and members, say to them that this is a thing that ought to be done and must be done, it is pretty certain that it will be done. There is nothing that will do more to promote higher medical education, to stimulate research, and to crown American medicine with honor than to give ample means to this great Library and Museum to obtain materials, and to publish widely the results.

"MEDICAL AND SURGICAL HISTORY OF THE WAR."

This matchless record of military medicine and surgery, is a marked testimony to the profession of our land. Let us for a moment compare it with similar work elsewhere. After the great Crimean war was over, its experiences

collected, weighed, and analyzed, how strange, in the light of present surgery, and in what contrast with the lessons taught in our great conflict, is the record of McLeod upon one vital operation—trephining for fractures of the skull. In his "Notes on the Surgery of the Crimean War," that distinguished gentleman says:

"If any patients were lost from not having been operated upon, I never saw any of them, but I do know of some patients who died because they were subjected to operation."

And what a fearful commentary upon the military surgery of that campaign McLeod makes when he writes:

"Thus it would seem as if severe fatigue, irregular, and it might be intemperate, diet, are less injurious to men with fracture of the skull than the probings, pickings, and trephinings which form the more orthodox and approved practice."

It may be truly said that the judicious use of the trephine during the conflict between the States, supplemented after the war by American surgeons, especially by one of our fellows, Professor W. T. Briggs, led up, led surely, safely, and steadily to the achievements of Victor Horsley, the master of us all in brain surgery.

MEDICAL SOCIETIES.

Our medical societies, local and national, are great factors in professional progress. Not alone are they valuable for their social opportunities, but in and through them a vast amount of valuable matter is presented.

MEDICAL LITERATURE.

Had Sidney Smith been a physician and given to reading, he would not, even in 1850, have asked the questions: "Who reads an American book?" "What does the world owe to American physicians or surgeons?"

This reverend gentleman, this famous critic, could not have heard of Ephraim McDowell, whose brief paper, detailing his first three cases of ovariotomy, published in *The Philadelphia Repertory*, in 1817, was of more value, did more for the conservation of human life, than a score of ordinary publications. Our first half century may be poor in books, but it abounded in strong, brave, conscientious, and devoted men, men who, with the most limited resources, accomplished the grandest results. They compelled success because they deserved it.

The ink was hardly dry upon that cynical pen when anæsthesia was presented by the profession, so poor, as he supposed, in valuable works.

But what country or age can match, in great contributions to the relief of the suffering, McDowell, Sims, Bigelow, Sayre, Batty, and Emmett, and that trinity of men—Wells, Morton, and Jackson—who gave anæsthesia to the world. Think of anæsthesia and of its influence upon the progress of medicine and surgery. But yesterday a writer in the London *Lancet* gave a graphic history of its reception in London; how the great Liston, having a patient who could not nerve himself up to the point of consenting to have a limb amputated for strumous disease of the knee-joint, decided that, "if the insensibility could be insured and maintained for one minute, he would amputate." Reflect for a moment on the hesitancy of the great surgeon of University College Hospital, as he stood by the side of that patient; he could hardly believe the novel report as it came from over the sea. Willing and anxious as he was to operate, he hesitated to urge the poor patient to make the experiment—experiment it then was. In a week, however, it was legitimate practice all over the world.

The heart of every American physician is filled with thankfulness when he remembers that, in the Providence of God, this great boon to humanity was vouchsafed to his country. The very ground upon which stands Massachusetts Hospital is sacred to us all. Associated with the discoverers must ever be the name of Dr. Hayward, who performed the first operation under the strange letheon. Previous to this, operative surgery was slow, tedious, and almost cruel. Contrast it to-day with what it was previous to 1847. What grand strides it has made under the direct support of anæsthesia and its almost equal co-laborer, antisepsis; the great cavities are invaded, and invaded safely; the abdomen has become a familiar field, and who can forecast the surgery of the brain?

Since Emmett's operation we hear no more, neither in this country nor abroad—neither in London nor Berlin, neither in Paris nor Vienna—of that culmination, that *ultima thule* of ignorance, "ulceration of the os." What a disgrace that term was to the surgery of the world!

The ignorance in diagnosis was only surpassed by the cruel treatment which it evoked, the application of caustics to the tender everted membrane of the cervical canal.

Has the operation, Bigelow's litholapaxy, the crushing and evacuation of a stone at one sitting, been truly estimated? Its adoption in one celebrated case might have changed the destinies of Europe. Previous to Bigelow, lithotrity was an uncertain, and, in most hands, a cruel operation: "Crush all possible at a short sitting, and allow the fragments to pass *via naturalis*." Bigelow realized that if anæsthesia is safe for two minutes, it is safe for two hours or more; hence, he said, "Crush it at once, and evacuate the bladder by an aspirator." The operation, in proper cases, is as practical as the description is brief and efficient.

The accomplished Edmund Owen, M.B., F.R.C.S., upon calculus, says: "With rare exceptions, only two operations are now practised—supra-pubic lithotomy and crushing, with evacuation at a single sitting." A high compliment from an eminent authority.

The story of Ephraim McDowell, though so often repeated, humanity never tires of hearing. To us he belongs, and to us only; we cannot share his fame with another; we would not if we could. Who can measure the relief which his operation has bestowed upon suffering woman?—not only woman, for his was the genius which opened the way for laparotomy in both sexes.

CLOUDS.

What has been accomplished by the profession in this country, self-reliant, and as we have heretofore said, without Governmental or social support, is certainly worthy of congratulation, and gives grounds for hopes of a rosy-hued future; but, alas! there are some dark clouds to be seen—some spots on our sun of promise! Have we inherent defects in our organic law—our *esprit de corps?*

Upon the face of our promising future some omens of evil appear, indications which look not up but down, not forward but backward, not to the elevation but rather toward the degradation of our profession. Heretofore we were an organization into which no species of fraud could enter—pretension, ignorant pretension, stopped at the door. No *ism* or *pathy* was admitted; something more than a diploma, "a legal diploma," was required—a clean bill of conduct, free from false assumption, assumption of universal knowledge, of specific remedies, of imaginary potencies; in fact of all shams and false claims, a guild in which there was the greatest freedom for the truth, the largest liberty for the right. No vender of secret remedies was admitted, because of the ignorant presumption in which they were conceived and propagated; but, alas, that we should have fallen upon the evil times when "patented processes" are attempted, when "processes" of valuable remedies are kept secret. These remedies with "patent processes" are in daily use. This is one of the dark spots in the picture. It came in with the "legally qualified practitioner." What is antipyrin, antifebrin, salol, sulfonal? The reliant patient may well propound such questions. Who can answer them? Are we relegated at one fell move back into outer darkness, the associates of venders of "secret remedies," of "patented processes?" What higher is a "patented process" than a "patented nostrum?" The profession was never so low as to countenance the latter; but have we not, in

these later days, become propagandists of patented, and therefore secret, processes?

LAWS FOR THE REGULATION OF THE PRACTICE OF MEDICINE.

It may be asked, has the standard of professional excellence been raised by laws enacted in many of the States for the regulation of the practice of medicine?

These laws banish the poor creatures without diplomas, but make respectable, *quasi*-respectable, all who have so-called diplomas from whatever source. Shams and pretenders are in this way made "legal," and claim whatever protection and recognition that term may give or imply. A chartered institution, in most of the States, represents a formal application for incorporation to a Secretary of State, the signature of that officer and nothing more. The process of graduating from such—the faculty often consisting of but a single person, or a man and his wife—would hardly be called a farce; the subject is too serious. "Legally qualified!" think of it; and yet this legally qualified creature will claim and expect to meet the highest and the purest. Is this an advance upon the requirements of the Code, the morals and *esprit de corps* of which have never been questioned?

What has been the effect of these diplomas? Let any candid man answer. Have they not tended to make vice and presumptuous ignorance respectable?

Let us be true to ourselves; pitch cannot be touched without defilement. Our profession must be kept pure, or else it will degenerate and sink to the level of a trade.

In State Boards of Health, by the side of physicians, we find these "legally qualified" practitioners. Where lies the responsibility? Is it with us? Our self-examination on this subject should be searching. If we have failed in our duties to humanity, let us be swift to acknowledge it, and be still more eager to correct our error.

The presence of this body of professional gentlemen, representing our entire country, furnishes sufficient argument for the existence of a National Organization; one embracing the virtue and strength of the profession, one to which all questions should be referred for just and final decision. Questions will arise, differences of opinion will occur between honest men. We must have some tribunal, some body, to which these questions, these differences of opinion, can be relegated for solution. The golden rule is a principle, not a law; it cannot interpret itself. Its application to life in detail must be defined. In this respect we are like other men and other organizations. Our morale, however, is higher; it has a zeal, a spirit, a hope and confidence peculiarly our own. If we would have our organization pure, we should make it strong—strong enough to eliminate all that is not true or truthful. We are mortals; not transcendentalists. We cannot live as the commune. We must have laws; remembering always that they are not made for the righteous, but for the sinner. "They that be whole need not a physician, but they that are sick." I will not attempt to defend the ethics of our profession. It would be a poor compliment to your intelligence, to your manhood; for there is not a clause in our Code which a gentleman could not cheerfully obey. Organize whatever we may please—associations of Specialists, of Physicians, of Surgeons, Academies of Physicians, Congresses of Physicians and Surgeons—but let us not lose our loyalty to this parent association. Projected almost half a century ago, when medical societies were few, it has annually convened—in the North, in the South, in the East, in the West, and in the far West, on the Pacific shore; if you will examine its yearly roster you will find that it embraced the best and the wisest. Almost all who were present at the beginning are at rest; their places have been filled by worthy men. Thus yearly new life, new men being added, this Association cannot grow old.

"When a people hold their lives and property as nothing, the enemy has already suffered defeat." So, too, when virtue will not compromise with vice, the victory, although it may be long delayed, will surely come.

Of the American Medical Association let us unite in saying, *Esto perpetua!*

SECOND DAY, WEDNESDAY, JUNE 26TH.

The meeting was called to order at 10 A.M. Prayer was offered by Right Rev. Thomas M. Clark (Episc.), Bishop of Rhode Island. The

ADDRESS ON GENERAL MEDICINE

was then delivered by WILLIAM PEPPER, M.D., of Philadelphia. This address consisted of thoughts suggested by the life of Benjamin Rush. Time has dealt tenderly with his memory, as he will always remain among the first of our great physicians. His political services, although great, were less important than those he rendered to science. The political appointments of Rush were laborious and unprofitable, as he refused pay for public services. In 1785 he started the Philadelphia Dispensary, and this example was followed by many others. He was profoundly interested in moral philosophy, and attracted general attention by his writings in this department. Among the first to indict capital punishment, he started a powerful plea for reforming the penal code. In range of subjects and grasp of them, it is hard to equal him.

A TRUE SOCIAL REFORMER.

In 1771 Rush denounced slavery, and he was likewise an opponent of ardent spirits, although not a prohibitionist. He also opposed the use of tobacco. Versatility and activity characterized his life.

A LEADER IN ALL SUBJECTS.

Rush attained the highest rank in letters. His medical lectures were eloquent and logical. He delivered some great orations; for example, that on Cullen.

FACTS ARE THE MORALITY OF MEDICINE.

His arguments were compact, with clearness, force, and flexibility of style. In the vital matter of education Rush was active and progressive, and much ahead of his time. He labored to establish our public school system, and defended the Bible as a school-book. Universal education is the only safety of the republic. The evidences of genuine and unaffected piety show in his writings and career. The subject of religion was constantly touched upon with sincerity and an absence of sectarianism. He was active in philanthropy, education, and religion to the end of his life, but Rush was before all else a physician. The study of medicine was followed with a passionate intensity. From 1789 to 1813 Rush's history is largely the history of American medicine. He was influenced by the genius of Sydenham in medicine, and of Franklin in philanthropy. Sydenham was a true Baconian in his close observation of facts. Posterity judges the pupil to be worthy of the master. The excellence of the teacher was shown by the testimony of his pupils. Students went to Philadelphia from all parts of the country to profit by his teachings. Rush was the earliest advocate of

ADVANCED MEDICAL EDUCATION.

With reference to his advocacy of bleeding, we must not judge him too hastily. He bled more systematically than Sydenham, but in later epidemics he somewhat restricted this practice. The external application of cold was employed as well. In the record of the fever epidemic of 1792, bleeding and purging were employed in the early period of attack. For this he was much vilified and slandered, but he had first begun his treatment with the use of stimulants, and had got poor results. He considered his results were much better after using evacuants. Rush fought for what he considered an important principle. It is difficult to believe that in certain epidemics, and in cer-

tain stages of disease, the bleeding practice of Sydenham and Rush did not do good. They did not bleed for the name of disease, as some of their followers did, but carefully considered the condition of each case. In all specific diseases, it is a question of

SOIL AS WELL AS OF MICROBES.

While Rush's work was pre-eminent in fevers, he was likewise eminent in alienism, and likewise in the treatment of chronic diseases.

Dr. Pepper concluded his address by making an appeal for the Rush monument.

Dr. A. L. Gihon, Chairman of the Rush Monument Committee, next gave his report. He was not able to report progress. At the present rate, the members of the committee will not live to see the consummation of this work. Other professions and callings are abundantly represented by monuments.

THE MEDICAL PROFESSION DOES NOT RECEIVE SUFFICIENT SOCIAL AND PUBLIC RECOGNITION.

The medical profession in the United States numbers one hundred thousand, and it was thought that if forty thousand would each contribute $1 a noble monument of art could be built. This hope has not been realized. At the end of five years only $1,000 has been received. This, to a certain extent, is the history of all monuments.

At the end of this report $264.50 was collected from the members present.

The following

AMENDMENT TO THE CONSTITUTION

was carried: "Strike out the last clause or paragraph of Section VII., relating to individually affixing names to the constitution and regulations of this Association."

THIRD DAY—THURSDAY, JUNE 27TH.

Prayer was offered by Rev. James Cogle.

A memorial from the American Social Science Association was read, in which the American Medical Association was requested to take steps to elevate the standard of medical education. It was suggested particularly that a more advanced preliminary education be insisted upon before students are allowed to begin the study of medicine. The memorial was accepted by the Association.

THE ADDRESS ON GENERAL SURGERY

was then given by Dr. Phineas S. Conner, of Cincinnati.

The surgery of the century has been of three periods, the pre-anæsthetic, the anæsthetic, and the modern one. Operative brilliancy characterized the first. The suffering inseparably connected with the use of the knife and the nervous depression resulting therefrom was to be limited chiefly by celerity of execution; hence, the swift-moving hand was an essential part of the equipment of the fittest surgeon.

When, in the amphitheatre of the Massachusetts General Hospital, "the problem of surgical anæsthesia was definitively solved," a new period began. Pain was no more and it was permitted to examine earlier and more thoroughly, to remove more extensively, and to operate successfully in regions previously altogether, or in great measure, beyond the reach of art. For twenty years or more, progress was in the line of diagnosis, of development of new and better methods of operating, of extension of the range of surgical interference. Time was no longer an element of prime importance, and the work was regarded as quickly enough done when well and thoroughly done—too much so, in fact, for not seldom the best interests of the patient have been jeopardized by unnecessary delay in execution, that would not have occurred but for the existing profound insensibility. But though operations in this anæsthetic period were without much of the terrors of the olden time, yet they fell far short of producing the wished-for result in preservation of life and early restoration to health. Wound complications were still as ever the bane of surgery, and too often the wisest planned and best executed operation resulted in failure because of the supervention of one form or other of septic infection.

It is scarcely twenty years since patient investigation, careful experimentation and practical testing began to throw strong, clear light upon that most obscure of the subjects of medical study, the causes of disease. As never before in the history of medicine truly scientific methods of research have been adopted and pursued by a multitude of trained observers in all civilized countries, and surgery has entered upon its scientific period, in which operator and patient are profiting by the labors of the chemist, the botanist, the physiologist, the physician, equally with those of the practical and experimental surgeon. It seems but yesterday when Lister's early papers startled the world. It is but twenty-two years since the first one was published, yet what enormous advances since then in knowledge, in treatment, and in the field of operative interference! A new department of science, surgical bacteriology, has been created (for what was done prior to 1867 may, for practical purposes, be left out of consideration), and in its development has been worked out the mycotic origin of all those pathological processes looked upon as inseparable from traumatisms, or almost necessarily associated with them if severe. Suppurations, gangrene, septic infection, erysipelas, tetanus, we know to depend upon the presence or the action of one or other of definite organisms that may be isolated, cultivated, and inoculated. Recognizing the cause, it has been comparatively easy to devise methods, more or less perfect in action, to prevent the development or neutralize the influence of it, and there has been worked out an antiseptic and aseptic wound treatment, the results of which are simply marvellous. But just here I must protest against the wisdom or the justice of the sweeping declaration of a few enthusiasts, who see in other than speedy recovery after injury or operation, evidences of what they are pleased to consider criminal ignorance or neglect.

The existing strong probability that in any given case septic infection might be prevented has given warrant for the performance of operations that in pre-aseptic days were not to be thought of.

Intestinal surgery, that so short a time ago meant scarcely more than the removal of an ovarian tumor, too often carried until death was evidently fast approaching, now includes operations upon almost every part of each hollow and solid viscus, and laparotomy has taken its place, as a safe, proper, and often indispensable prerequisite to the determination of obscure disease. Penetrating and perforating gunshot wounds, so generally fatal when treated by rest and opium, have in at least forty cases been recovered from after section and suture, and there are now but few surgeons still unconvinced of the wisdom of early active interference. At our last meeting Senn's carefully elaborated and beautiful demonstrations set forth a means of determining the existence and location of intestinal wounds, that if safe, as it has thus far seemed to be, will remove the greatest objection to laparotomy in these cases—the uncertainty in the earlier hours of bowel perforation—and prevent what otherwise will occur, the overlooking of one or more lesions. It is not to be expected that all, or any close approximation to all, of these very dangerous wounds will be saved by early operation, for great injury will ordinarily be produced by the bullet, be it large or small; but every case that recovers after section and suture may fairly be considered as rescued from an otherwise almost inevitable death. Unquestionably the laying open of the peritoneum and operating upon an abdominal organ has at times been carried too far. Useless work has been performed, and life has been sacrificed, for it is not true (so far, certainly, as operators in general are concerned) that abdominal section is in itself without danger, doing no harm if it accomplishes no good. But not a day goes by that, somewhere or other,

life is not prolonged, and comfort secured by an intraperitoneal ligation, suture, anastomosis, or excision, rendered proper, may we not say possible, only by the aseptic results of scientific discovery and experimentation.

So, too, the diseases and injuries of the other great cavities are being attacked by the surgeon's knife, guided by the diagnostic knowledge, the localizing exactness, and the technical skill of the physician, the physiologist, and the vivisector.

There has been but a beginning of intrathoracic surgery, though for years empyemas have been treated by free incisions, supplemented not seldom by extensive excisions of portions of the chest-wall, and even in preaseptic days deeply lodged foreign bodies were removed. Only very recently has the lung been cut into for the evacuation of abscesses and the treatment of gangrenous areas, such pneumototomies, resulting favorably in one-half of the reported cases; and as yet, but few subpleural tumors have been attacked. There is every reason for believing that in the near future surgery will be able to render great service to the subjects of not a few forms of thorâcic disease now regarded as beyond the reach of art.

The most recent and the most brilliant triumphs have been in the treatment of diseases and injuries of the brain and cord. Nowhere else have our art and science so joined hands in affording relief as here. Tumors removed, foreign bodies taken away and their tracks drained, convulsion-centres excised, serous effusions tapped, life preserved, and comfort secured; so reads the record. Much remains to be done in the determination of the trouble, the exact localization of the mischief, the perfection of technique. Not seldom mistakes will be made, errors committed, but it will be more and more demonstrated that the trained mind and the skilful hand working together can recognize and successfully treat otherwise irremediable affections within the skull and the spinal column.

As the operative procedures necessary for the exposure and removal of the spinous processes and laminæ of the vertebræ are but little dangerous, and as septic meningitis can almost certainly be prevented, a change may reasonably be looked for in the treatment of vertebral fractures, especially those in the lower half of the column. Up to this time the cases in which active interference has been made have almost always been those of long duration, in which existing inflammatory changes in the cord, if nothing worse, could not but prevent any favorable result; but even in these, of late, the patient has been none the worse for the operation. Without doubt, early removal of pressure, whether made by bone or blood it matters not, would save many an one from all those deplorable conditions consequent upon myelitis with which we are unfortunately too familiar.

Is there any good reason why spine fractures should not be treated as skull fractures? and who would now for a moment think of rest and position as the routine treatment of the latter injuries?

But in this scientific period there has been much more accomplished than extension of the range of operative interference, great and important as this has been. As never before it has been possible to preserve damaged parts and to retain important functions, to replace completely detached pieces of bone, and secure adhesion as perfect as of the fragments in a simple fracture, to transfer large areas of integument and ingraft pieces of bone, to supply deficiencies in soft or hard parts by skin or bone from dog, rabbit, chicken, or frog. Every department of conservative surgery has been and will yet more be benefited by the preventing of the evils consequent upon the action of minute organisms.

The two diseases that produce the widest destruction to part and to life are tuberculosis and cancer. The former, that until the discovery of its causative bacillus was regarded as of rare occurrence in parts belonging to the domain of surgery, is now known to be the producer of the vast proportion of the diseases of bones and joints, and of many of those attacking the skin and more external organs.

Primarily and often for a long time local, if allowed to go on unchecked it affects other and remote regions, perhaps rapidly becoming generalized. But what has been learned respecting it? That it may attack any part of the blood circulation which is disturbed by general enfeeblement or local injury of ordinarily not severe character; that the bacilli may be destroyed or become encapsulated; that the softened tissues may, in like manner, be taken up and carried off, or shut in temporarily or permanently; that if the diseased focus be completely removed, as it often may, the part and the whole are as if it had never existed, except so far as function is disturbed by the loss of what has been taken away and by the scar tissue resulting. How has treatment been affected by this knowledge? It is of prime importance that early diagnosis be made. Located in bone or joint and detected while yet limited, prolonged rest, as absolute as possible, will, in the majority of cases, certainly in young subjects, secure destruction, absorption, or encapsulation of organisms or affected cells with resulting restoration to health. Advanced to the stage of caseation and liquefaction, rest may yet be followed by recovery, though ordinarily free drainage, with or without associated removal of the infected tissue, will be of great advantage. Injection of agents, such as iodoform or the acid phosphate of lime, that will destroy the bacilli and the tuberculous masses, may produce the wished-for cure. But ordinarily it will be better, indeed generally necessary, to remove the affected area either by formal or informal excision or by amputation. Whether diseased joints are best treated by arthrectomies or by typical excisions is one of the questions still *sub judice*, though in the last three years, as never before, it has been shown that former removals of the larger articulations can, in a large proportion of cases, be followed by early repair and solidification without suppuration or constitutional disturbance—even at times with recovery of original function. Though it is not likely that it can ever be said with truth that the days of the lame and the hump-backed have gone by, because of neglect, delay, or generalization of the pathological process, yet we have good reason to believe that further advances in knowledge of the development and extension of the tuberculous disease will enable the surgeons of the future to so limit, ameliorate, and cure the surgical tuberculous affections as that they will no longer constitute one of the most important and destructive of the external diseases.

Of cancer it may with truth be said we know very little; yet of nothing do we more need knowledge. Much less often met with than tuberculous disease, it is yet of not infrequent occurrence. In our eight largest cities (Boston, New York, Brooklyn, Philadelphia, Baltimore, Chicago, St. Louis, and Cincinnati) during the five years ending Dec. 31, 1888, of 579,684 deaths from all causes 13,094 were from cancer, 2.18 per cent., and as we all know the disease is not peculiarly an urban one. In five of the eight cities (New York, Chicago, Cincinnati, Brooklyn, and St. Louis) the death-rate was much the same, being in the order given 2.1, 2, 2, 1.94, 1.93 per cent. In Boston it was highest, being 2.98 per cent. In Baltimore it was 2.4 per cent., and in Philadelphia 2.28 per cent. In Cincinnati in the last year the percentage reached 2.6 per cent., while in 1868 it was but 0.55; an altogether exceptional rate, however, as only once since has it fallen below 1 per cent., in 1870, when it was 0.8. For these figures I am indebted to the Health Officer, Dr. Stanton. One in fifty, then, of the deaths, in an aggregate city population of over five millions, is due to this disease, and if we have regard only to the mortality of those within the cancer age, *i.e.*, more than thirty-five years old, about one in twenty of the deaths is thus produced. Even among the carefully selected adult individuals carrying life insurance, who are free, or are supposed to be, from family predisposition to cancer, from 2.5 to 3.5 per cent. of the mortality is from this disease. The statistics just mentioned, and particularly the marked

contrast between the high death-rate in Boston and the low one in St. Louis, give but little support to the theory of Haviland, that low lying lands subject to frequent overflows are those in which the disease is most prevalent.

In preparing the mortality statistics of the census of 1880 Dr. Billings found that the disease was most prevalent in New England and Southern California, and least so in the South and upon the Mississippi, It is to be hoped that in the preparation of the vital statistics of the next census such attention may be given to this subject of occurrence and distribution and such full and complete reports secured as will add materially to our knowledge, and go far toward determining the correctness or incorrectness of the views of the English writer named. Care should be taken to separate if possible cases of sarcoma from those of cancer.

Hirsch to the contrary notwithstanding, this affection is becoming more common throughout the civilized world, certainly is so in our own country and in Great Britain. Increased accuracy of diagnosis will not account for a doubling in twenty years of its mortality rate in Massachusetts or in Cincinnati, or in less than twice twenty years in England. Frequently, if not usually, attacking individuals in good general health (though oftentimes appearing soon after a period of marked mental anxiety and depression), it has regard neither to social conditions nor hygienic surroundings. Unlike consumption, which is often of limited duration, ending in recovery, and at the worst, ordinarily bringing death gently, cancer left to itself very rarely is spontaneously eliminated, is almost inevitably destructive to part and to life, and is often attended with severe physical and mental suffering.

What is its starting-point? an unused, long-dormant embryonic cell, at length aroused to activity by local irritation, general enfeeblement, or nervous exhaustion? In all probability, no. An abnormal epithelial development, abnormal because unconfined within its normal limits. But why unconfined? An epithelial cell undergoing proper degenerative changes, but arrested at some point short of its complete alteration. What stops its retrograde movement? is it of mycotic origin? That it should be so would hardly be more strange than that lupus or lepra should be. That it is so has not yet been proved. The many investigations that have been made, some of them for a time apparently fruitful, have thus far failed to discover a causative bacillus, unless further and extended cultivations and inoculations shall prove that Kübasoff has actually found it. Experimental inoculations have again and again produced no specific result, but Lampiasi has claimed that by using a bacillus culture from the blood he succeeded in causing in a healthy part of the patient's skin the growth of a nodule having "an alveolar stroma with wide meshes, which contained many epithelial cells of different forms and sizes;" and Hanan has twice successfully transplanted from rat to rat.

No more inviting field is open to the bacteriologists and experimenters of our country (and we have a number of them, as also well-equipped laboratories) than this very one of cancer. Cases are numerous, specimens are being daily secured, and there is no reason why America should not now do full part in settling the vexed questions of nature and origin. The imperative necessities of a struggle for existence, and the intense practicality of a new and developing country, have heretofore prevented any but the very few filled with enthusiasm or independent of fortune from engaging in purely scientific studies involving minute investigation and patient labor, with often no apparent practical outcome. But the times are changing, and the profession of our country may, and doubtless will ere long, be as well and favorably known in biological research as it has been and is in relation to ovariotomy, to ether, to the hip, to the treatment of stone, to the surgical diseases of women, to abdominal section, to a multitude of affections and the means of treating them.

As we see it in lip, or breast, or uterus, or stomach, or it matters not what part or organ, is cancer a local disease, or but a local manifestation of a constitutional state? The question is still an open one, though the great majority of pathologists and clinicians are now agreed that wherever seated it is primarily and for a time purely local, whatever may be the general conditions, inherited or acquired, that permit or favor its development. If not of limited area and capable of complete removal, operative interference can be justified only on the ground of affording temporary relief—unfortunately all that is accomplished in the majority of cases submitted to the knife. But there is great encouragement in the knowledge that a certain percentage of patients operated upon do recover; that is, remain free from recurrence for three or more years; and that this percentage is larger or smaller according as the disease is so situated as to be early detected and thoroughly removed, or the contrary. Located in the lower lip or the cervix uteri, for example, two out of five patients operated upon get well, in the breast one in eight. Why this great difference? Because, we may believe, of the site itself and of the degree and rapidity of extension in parts immediately adjacent, and of glandular involvement; in other words, of the likelihood of early and the possibility of complete extirpation, or the opposite. How are to be regarded those cases in which, after five, ten, or twenty years of apparently perfect health, the disease again shows itself and destroys life? As of long quiescence of infected and infecting cells, or of a new and independent affection? The latter explanation certainly makes a far less demand upon our credulity, and it is no more strange that there should be a second than a first attack in a person and tissues possessing an undetermined and unknown receptivity, and such there certainly must be that cancer may be developed at all.

Of nothing are we more certain than of the immense advantage there is in early recognition and speedy removal; and, on the other hand, of the utter uselessness, so far at least as the ultimate result is concerned, of any surgical interference after a wide extension has taken place.

In perfecting, therefore, the means of establishing diagnosis at an early day lies an important work in the future. Though consideration of age, of location, of pre-existing long-continued irritation, go far toward settling the nature of a given tumor, and upon such estimation of probabilities action may generally be safely taken, yet, as a rule, certainty of the character of the growth can only be had after scientific determination of its anatomical constitution. Whatever, then, makes it possible to safely, easily, and without pain remove for microscopic examination a sufficiently extensive piece of the mass to show its deep as well as superficial structure, is of much practical value. A convenient and promising little instrument has lately been given to the profession by Dr. Collins Warren, of Boston.

Physiological and chemical investigations have furnished us with early and reliable evidence of the existence of cancer of the stomach in absence of the hydrochloric acid from the secretions of that viscus; may not kindred investigations give us like aid when other organs are affected?

The modern and scientific wound treatment now enables the surgeon to remove more extensively and at the same time safely, so that active interference may reasonably be expected to be, and is, attended with much better results than could be looked for a few years ago. Much of the work, though, that in the last decade has been done upon internal cancers has been of questionable utility, chiefly because of its late performance.

What will the future reveal respecting the non-operative treatment? Will a drug or drugs be found to secure destruction and removal of the morbid mass? May the moderate continued electric current, or powerful interrupted currents, "flashed through," prove to produce, as has been claimed for them, entire disappearance of the diseased cells? Can some pathogenic organism be inoculated that, without killing the patient, will break down

the malignant growth? We all know what has been done with the micrococcus of erysipelas.

In nothing could this Association do more than in determining by collective investigation and thorough committee work the frequency of occurrence of carcinoma in the country, as a whole, and in its several States the relation borne (if any) to geological formation, the age of appearance, the relative affection of parts and organs, the influence of therapeutic treatment, and the duration of life with and without operation. Five years of such work would suffice to accumulate a mass of statistics of very great value, the study of which could not but advance the best interests of patients and practitioners; and in this as in everything else, "many hands make light work." To physicians, surgeons, and therapeutists the subject is one of prime importance; and only by combined scientific and practical work can it be determined what excites and produces the disease and what can secure its relief.

As we survey the advances, etiological, diagnostic, and therapeutic, made in the few years just past that are of the scientific period, and consider, even in the most hurried way, the problems that are yet awaiting solution, problems relating to the nature, origin, and treatment of the diseases and injuries of parts within the domain of surgery, what may we not reasonably anticipate as the future of our science and art. Accidents must occur, diseases will prevail, no matter how great the triumphs of preventive medicine. Surgical pathology is but in its infancy. Years ago it was declared that operative surgery had reached its climax. Yet since then operations have over and again been done within abdomen, chest, and skull, upon the larynx, throat, and spinal cord, that in boldness of conception and brilliancy of execution have no parallel in the history of medicine. The end is not yet; nor will it be while, the world over, there are active minds and cunning hands busied with the determination of the existence and extent of surgical affections, and ready and able to remove them, aided more and more by the labors of investigators in many departments of science, general as well as medical. Year by year he who may deliver the address on surgery will be able to report doubts removed, discoveries made, remedies employed, and operations done.

The report of the Treasurer, Dr. R. J. Dunglison, of Philadelphia, showed the finances of the Association to be in a satisfactory condition.

The Nominating Committee then made their report.

The next meeting is to be held at Nashville, Tenn., on tne third Tuesday in May, 1890.

The following officers were announced: *President*—E. M. Moore, of New York; *First Vice-President*—J. W. Jackson, of Missouri; *Second Vice-President*—W. W. Kimball, of Minnesota; *Third Vice-President*—J. H. Warren, of Massachusetts; *Fourth Vice President*—T. B. Evans, of Maryland; *Treasurer*—R. J. Dunglison, of Pennsylvania; *Permanent Secretary*—W. B. Atkinson, of Pennsylvania; *Librarian*—C. H. A. Kleinschmidt, D. C. To deliver Address on General Medicine—Dr. N. S. Davis, of Illinois; General Surgery—Hunter McGuire, of Virginia; State Medicine—Alfred L. Carroll, of New York.

Hon. George Bancroft was presented to the Association amid great applause.

Sir James Grant, of Ottawa, was next presented and made a few remarks. The speaker first dwelt upon advances made during the past fifty years in the treatment of insanity. The line of this improvement was all in the direction of more humane methods; formerly "the insane were treated as criminals," but now they are treated and studied as other sick people.

A graceful tribute to the life and services of the late Dr. John Gray, of Utica, was next given. The speaker referred to the advances made in the surgery of the thorax, toward which American physicians had contributed so much. Preventive medicine and hygiene were dwelt upon, and the speaker thought that improved drainage and ventilation had contributed much toward the increase of health and life.

Medical education and examination were treated at some length. The crowding of the medical profession by poorly educated men was deplored. The best way to weed out irregular practitioners is to require "a rigid preliminary training." By this method the Medical Council of Ontario has succeeded in accomplishing very good results. Finally, Canadians are always glad to come to the United States because both are one people with common customs and literature, and with the same spirit of independence. The younger members of the Association were advised to record cases and write, not only for their own good, but for that of the general profession.

SECTION OF THE PRACTICE OF MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

F. C. Shattuck, M.D., Chairman.

First Day, Tuesday, June 25th.

The Section opened with the address by The Chairman, who read a paper entitled

A REVIEW OF PROGRESS.

In the treatment of pulmonary phthisis the inhalation of hot air has been tested and its intrapulmonary germicidal action is still unsolved. In the pathology of pancreatic disease Senn and Fitz rendered important service, and the latter has shown in his recent work that acute pancreatitis seems to be due to the extension of acute inflammation from neighboring organs. The diagnosis of pancreatic affections is thus shown to be not so difficult as was once supposed. Frerichs long ago, and Lancereaux more recently, have both called attention to the relation between atrophy of the pancreas and diabetes mellitus. In certain cases of diabetes the organism has lost its power of bringing the fatty acids to their normal end products, and in these cases diabetic coma is liable to occur. Graeber distinguishes the anæmia by a count of the red corpuscles and a hæmoglobin estimation. Hunter thinks that anæmia is an entity and probably depends on increased blood destruction in the liver. The chemical study of stomach disease has not given all that was hoped for it. The use of cold baths in typhoid fever still seems to be justified by favorable results. Sulphonal and amylene hydrate have proven themselves to be valuable ad ditions to our list of remedies of this class. In the use of suspension in the treatment of locomotor ataxia, deductions cannot yet be drawn with certainty. On the whole the progress of medicine for the past year has been gradual but noticeable.

Dr. Charles G. Stockton, of Buffalo, N. Y., read a paper

ON THE PASSAGE OF PORTAL BLOOD INTO THE GENERAL CIRCULATION, AND ITS PROBABLE RELATIONS TO TOXÆMIA.

After speaking of the difficulty of explaining the coma accompanying some diseases and their relation to the hepatic circulation and the inosculations and anastomoses in certain regions, he said that the portal blood underwent changes more or less before passing through the liver, and the blood of the portal vein was toxic These two facts have been proven by numerous studies in anatomy and physiology. Nature probably tries to prevent the toxæmia which is inevitable in so many cases by returning the blood through other anastomoses than through the liver.

DISCUSSION.

Dr. Wm. Osler, of Baltimore, said he thought the facts stated were partly true, but the anatomical facts could not always explain those conditions. It depended much upon how the collateral compensatory circulation was established. Post-mortem examination often showed cirrhosis with no previous symptoms. The portal vein may be obliterated by fibroid condition, and yet no toxæmic effects may be shown.

Dr. W. S. Tremaine, U. S. A., said the portal circulation is a part of the venous circulation. We too often speak of them as different. The action of the liver is similar to that of a filter. We do not understand altogether the action of the liver. These toxic symptoms are due to defective action on the part of the liver, whatever this action may be. The blood is an organ, not a fluid. The action of digestion is carried on in the blood. Physiologists and pathologists know very little about clinical facts, and we should not draw wrong deductions. Some of these so-called facts are only theories. We should combine the two, and not take the theorist's opinion when he was not versed in clinical facts.

Dr. John H. Musser, of Philadelphia, thought the physiological facts were very ingeniously brought out, but he could not agree with the speaker altogether.

Dr. H. A. Hare, of Philadelphia, thought we had perhaps overlooked the fact that any capillary net-work is just as destructive to any poison in the blood as the capillaries in the liver. These discoveries were made by Schiff and Lautenbach. The liver is simply a large capillary net-work. Not all peptones are poisonous. A pure peptone will fail to cause fever, while a partial peptone will cause a rise of temperature. We inject peptone into the rectum and get no fever.

Dr. Cronyn said cirrhosis reduced the size of all the vessels in the liver which made the change of blood easily understood, Cholesterin was produced because the function of the liver was altered.

Dr. Lister spoke of his experience in two cases of hypertrophic cirrhosis of the liver and the effects of mercurials on this condition, such as the bichloride in small and repeated doses.

Dr. Stockton agreed with Dr. Osler, but held that it was not common for portal blood to flow in the general circulation.

Dr. G. R. Martine, of Glen's Falls, N. Y., read a paper with the subject

A NEW PLAN FOR THE TREATMENT OF PNEUMONIA,

the object of which was to regulate the heart's action by such a drug as veratrum viride, and not stimulating the heart at a time when the lungs were already too much engorged with blood. He thought stimulation of the heart did much harm when there was red hepatization.

Dr. I. E. Atkinson, of Baltimore, thought the veratrum viride treatment had been used long ago without much success. It produced alarming symptoms in small doses. Patients thus ill die more from heart failure than from being drowned in their own blood.

Dr. H. A. Hare said in the first stage we should give veratrum viride to abort the disease, and in the second stage he gave digitalis. Few cases of death occur from veratrum viride, as emesis prevents poison.

Dr. Cronyn thought no two cases should be treated alike.

Dr. Martine claimed that his plan was new in that no writer had told us when to give the drug (sedative), and hold the pulse below 80° F.

Dr. John H. Musser, of Philadelphia, read a paper on

SOME CLINICAL ASPECTS OF VOMITING.

After reviewing the act of vomiting, he divided the acts into direct and reflex. Changes in the organs of sense, etc., will also cause vomiting. The duration, time of day, character of vomitus should all be considered in looking for the cause. In naso-pharyngeal catarrh morning vomiting is not infrequent; in chronic uterine disease also. Sudden and painless vomiting in the aged is often one of the first symptoms of cerebral hemorrhage. There is no exhaustion in this kind. If collapse occur it may be uræmic vomiting. Prognosis is always grave in these conditions. In all conditions of vomiting the causes should be looked for in every one.

DISCUSSION.

Dr. Stockton thought it was difficult to go over all the causes which might cause vomiting. Chronic gastritis often occurs with naso-pharyngeal catarrh, which would explain the statement just made.

Dr. W. J. Scott, of Cleveland, said in naso-pharyngeal catarrh there was also chronic dilatation of the stomach with catarrhal conditions which would explain the facts stated by the reader.

Dr. I. E. Atkinson, of Baltimore, read a paper on

SOME OF THE RARER AND GRAVER FORMS OF CINCHONISM.

Cinchona and its allies are generally given without regard to idiosyncrasies. Intoxication, etc., which may occur as the result of cinchonism, may be very grave. The absolute frequency of cinchonism is not great, but worthy of notice. He had collected over fifty cases of quinine amaurosis, in which the blindness was present in nearly all. The vision is often affected without suspicion of the drug. In most cases the blindness occurs suddenly, but in many cases it may be gradual. It may occur within twenty-four hours. In all, or nearly all cases, the sight returns, but the eyes are often affected for a longer time, even after two years, and color-blindness often permanently results. The blindness is almost complete, the color-blindness is marked for a long time; the pupils are much dilated, the disks are white and pallid; there is contraction of the visual field; impairment of hearing is often noticed; some patients have anæsthesia of the cornea, strabismus, etc. Knapp showed that relapses may occur with very small doses. The pathogenesis of quinine amaurosis is not at all understood, although many explanations have been offered. The dose of quinine sufficient to produce blindness is very variable. H. C. Wood had seen it after doses of twelve grains. Blindness always results when the causes are lethal. Immense doses are taken without causing blindness, so that it undoubtedly occurs as an idiosyncrasy. Tinnitus aurium is common, but permanent deafness has never been recorded, even complete temporary deafness has probably never been observed. In those already deaf this deafness may be increased. In the ear there is much anæmia. Enormous doses of quinine are necessary to produce death, and fatal cases of cinchonism have rarely been recorded. The cardiac conditions described in the autopsies of the various fatal cases are very dissimilar. Sufficient attention has not been given to the dangerous and toxic effects of quinine in large doses.

Dr. H. A. Hare said as soon as quinine reaches the pyloric orifice it is precipitated and passes out unchanged, and this would explain the harmless effect.

Dr. Cronyn fully endorsed the opinion of Dr. Hare from a large experience.

Dr. W. J. Scott did not agree with the previous speakers at all. His experience had shown the good effects of large doses, and he thought the theory here did not bear out the facts, which no one with a large experience could deny. The unfavorable conditions were present before the patients took the dose.

Dr. Musser said most cases for which quinine was given were cases of malaria. In these cases small doses would control the paroxysms. Osler noticed the flagellate bodies in the blood would disappear after the use of very small doses of quinine.

Dr. Tremaine gave his experience, in which he said that in malarious districts large doses were necessary, and in non-malarious districts large doses did harm.

Dr. Cronyn spoke of Bence Jones' theory in regard to the effect of large doses of quinine on the appearance of the blood. He thought if too much of a drug were given the excess was passed off by the bowels.

Dr. H. A. Hare said that other substances showed this condition of the blood besides quinine, and this theory of Bence Jones did not hold good to-day.

Dr. Lister agreed with Dr. Cronyn, but thought that the combination of several drugs might be more effective.

Dr. Shattuck reminded the gentlemen that they were wandering from the subject, and called on Dr. Atkinson.

Dr. I. E. Atkinson, in conclusion said he only wished

to bring forward the one fact that excessive doses of quinine had been fatal. In reply to Dr. Hare he would refer to the habit of giving calomel before quinine, which increased the acidity of the gastric secretions. Hypodermic injections would obviate this. One case in a lifetime should prevent us from giving it too lavishly, and compel us to give it under the skin. He had collected fifty known cases, and probably there were many unrecorded cases.

Dr. Robert T. Edes, of Washington, D. C., then read a paper entitled

HYDRONEPHROSIS AND RENAL ATROPHY, ESPECIALLY AS CAUSED BY FUNCTIONAL DISORDERS OF MICTURITION,

in which he argued that serious renal troubles in children were not necessarily caused by constitutional disease but might find their etiology in the kidney itself.

Second Day, Wednesday, June 26th.

Dr. Francis Delafield read a paper entitled

CHRONIC ENDOCARDITIS

Few cases are more common than this disease, and it may be present within great variations, from a mere inconvenience to great distress on the part of the patient. Nearly all the most important symptoms of chronic endocarditis are due to the disturbances produced in the distribution of the blood throughout the body. It is not easy to say why, in some cases of chronic endocarditis, there are disturbances of the circulation, and why in other cases there are not. The disturbances of the circulation are due to the endocarditis, dilatation, and hypertrophy of the ventricles, inflammation or degeneration of the wall of the heart, inflammation of the coronary arteries, abnormal heart-action, and the associated pulmonary emphysema, chronic endarteritis, and chronic Bright's disease. These conditions, all of them, must be considered in connection with chronic endocarditis. In regard to the last condition mentioned, namely, chronic endarteritis and chronic Bright's disease, he found that albumen was present, casts less constant. Anæmia and dropsy are present, and the patient gets worse. Changes in structure much the same, however the symptoms may be. Arterial walls thickened. There are three forms of chronic nephritis: 1. Chronic nephritis with much exudation; serum exudes from blood-vessels to the urine; amount of urine varies; specific gravity is lower; albumen and casts are constant; patients do badly. 2. Nephritis with moderate exudation; urine diminished; specific gravity lower; no albumen or casts present unless patient does badly; liable to dypsnœa, headache. 3. Chronic nephritis with little or no disturbances; urine shows no change; they gradually grow worse and die.

DISCUSSION.

Dr. William Pepper, of Philadelphia, said he was glad to hear the author of the paper dwell on the changes in the arteries. Our knowledge of the nerve-ganglia about the heart is very defective. Rest in bed is important in the prevention of extension of the disease. In the cases where there is no sign of progressive lesions we should still be on our guard. In some cases bleeding does a great deal of good, even when the cases seem to be anæmic.

Dr. William Osler, of Baltimore, thought chronic endocarditis produced in itself no symptoms. So long as compensation is perfect the patient needs no help.

Dr. Osler then read a paper entitled

SENSORY ASPHASIA; WORD-BLINDNESS WITH HEMIANOPSIA.

About one dozen cases of word-blindness were now on record. The case reported was very typical. Patient could not pronounce words he saw, but could repeat them. He constantly misplaced words. He finally became paralyzed and died. There was softening on the surface of the brain, and deeper, as at the angular gyrus, and this softening was seen on the white matter, from the posterior horn of the gray matter, directly through to the surface. The word-blindness was undoubtedly due to the softening in the angular gyrus. The hemianopsia was due to a cutting off of the optic branches. The speaker also exhibited some

SPECIMENS OF BRAINS

prepared according to the Italian method, with zinc, zinc chloride, glycerine, etc.

Dr. James Tyson, of Philadelphia, read a paper entitled

THE INDUCTION OF PREMATURE LABOR IN BRIGHT'S DISEASE.

We should bring on premature labor: 1, In cases of Bright's disease where in previous pregnancies the symptoms had been extremely severe and dangerous; 2, in all primiparæ in whom there is Bright's disease previous to pregnancy; 3, those in which we have not the knowledge acquired in the previous cases. A large number of such cases terminate by miscarriage, and terminate well for the mother. It might not be a bad idea to examine the urine of every woman before marriage. A few cases may progress to full term without fatal issue, but these are exceptional cases. Each case must be decided on its own merits.

Dr. V. C. Vaughan, of Ann Arbor, Mich., thought the points raised by the speaker were very important, and his experience taught him to do the same, except in the case of primiparæ, where diet can do much by limiting the amount of proteid food.

Dr. I. E. Atkinson thought it was a bad precedent. In the primiparæ we get the most terrible results, and in his experience it was the contracted kidney which was the most to be dreaded. He waited in some cases until mild symptoms showed themselves, and then he brought about premature labor.

Dr. W. J. Scott, of Cleveland, O., did not think it was well to formulate such a rule, in every case, as Dr. Tyson suggested.

Dr. Carpenter, of Pottsville, also recorded his experience as against producing premature labor in primiparæ. He found bleeding and purging an efficient remedy.

Dr. J. G. Truax, of New York, said that his experience was that the patient would not submit to induction of premature labor if she did not feel badly, and this is especially true in the case of a mother desirous of offspring.

Dr. J. C. Wilson, of Philadelphia, thought the early recognition of the renal trouble was important, and that therefore the earliest possible examination of the urine should be made.

Dr. Tyson did not mean to say that premature labor should be induced in every primipara, but that in primiparæ it was very dangerous.

Dr. D. W. Prentiss, of Washington, D. C., read a paper on

THE PHARMACOPŒIA OF 1890,

in which he laid stress on the fact that in 1880, at the meeting of the Pharmacopœia Convention in Washington, twenty-two were pharmacists and forty-two physicians, showing that it was a subject very important for physicians to consider, and not a subject for the pharmacist alone.

Dr. George M. Garland, of Boston, read a paper on

RAYNAUD'S DISEASE.

Gangrene in this form was not understood until some investigators, such as Virchow and others, gave as their theory that this symmetrical gangrene, or, as it was later called, Raynaud's disease, was due to certain disturbances of the trophic nerves. The patient has a numb or dead feeling in the part affected, and the temperature is reduced. Then there may come symmetric asphyxia, in which there is pain and blue color of the parts on both sides. In the third stage dry, mummified, or moist gangrene sets in, with great pain. Fatal cases occur. The theory is that it is a tropho-neurosis, but the theories vary widely. It is evident that similar conditions are produced

by different causes. Erythro-melalgia may be considered in this connection, it occurring symmetrically. The treatment is not satisfactory.

DR. CHAMBERLAIN, of Mass., had seen a similar case, and had used morphia to deaden the pain and give the patient relief.

DR. HERRICK, of Cleveland, O., thought that in the two cases related, one an old man and one a child, it was not right to put them together as one type of disease.

DR. HOLDEN, of Vermont, had seen three cases, in persons otherwise healthy, and had used stimulation by having the hands plunged into hot and cold water alternately, with cure in three weeks.

DR. TRUAX, of New York, objected to the nomenclature of the disease. He thought the profession should protest against having a disease named after a man.

DR. J. V. SHOEMAKER, of Philadelphia, read a paper entitled

DIOSCOREA VILLOSA—WILD-YAM.

The root is used, it is pungent, pulverized with difficulty. A further analysis and a study of its physiological effect would be very interesting. A decoction, a tincture, and a fluid extract he had used. It acts as an emetic, diaphoretic, etc. It acts on the liver as in bilious colic; it affords great relief. Hepatic torpor is also quickly and promptly relieved by this remedy. In cirrhosis of the liver too much good must not be expected of any remedy, but dioscorea is of undoubted use here. After alcoholic excess, etc., it is of great benefit.

DR. JAGGARD, of Michigan, had used wild-yam in several cases and thought its effect was much like ipecac.

SECTION ON SURGERY AND ANATOMY.

FIRST DAY, TUESDAY, JUNE 25, 1889.

DR. N. P. DANDRIDGE, of Cincinnati, Chairman of the Section, read a paper on

SURGICAL INTERFERENCE IN FRACTURES OF THE SPINE.

The recent interest in the surgery of the spine dates from the removal of a tumor of the cord by Horsley, and the operation by Macewen for the relief of paralysis, in Pott's disease.

In applying the results to fracture, it must be remembered that, in cases of tumor, operation is the only method of treatment which promises any benefit. In Pott's disease paralytic symptoms often disappear, even after long continuance, and in one personal case, complete paraplegia lasting for more than three years and a half was finally relieved. Very often, however, the thickening of tissue making pressure on the cord, resembles permanence, a tumor growth, and removal by the knife offers the only prospect of relief. The result of trephining the spinal canal, in these cases, has given most brilliant results; recovery taking place in one case of Horsley's after six or seven years of paralysis, and in one of Macewen's after two years. The analogy of these cases and fracture must be applied with caution. In fracture the damage done to the cord is often immediate, and is not often due to continued pressure from narrowing the canal by displaced bone. Following fracture, however, we may have pressure produced by inflammatory products, which may assist in continuing the symptoms. In discussing the propriety of operation it is proper to consider the results obtained in fracture of the spine without operative interference. Burrill has shown that twenty-one per cent. survive, and one half of these make satisfactory recovery. It is apparent from these figures that a considerable number of cases are brought to a satisfactory termination, and in these the symptoms of paralysis, bedsores, and incontinence do not show any evidence of improvement for weeks after the injury.

In five cases of fracture of the dorsal spine under the writer's care, the plaster jacket was applied in three soon after the injury—in two with a satisfactory result and complete disappearance of paralysis. In the third, the recovery was only partial. In these cases the plaster jacket was applied by the hammock suspension, as suggested first by Mr. Davy. In one case suspension was employed five months after the fracture, and was followed by marked benefit. The fifth case was trephined, and the tenth, eleventh, and twelfth dorsal, and first lumbar laminæ removed at the end of five months, for the relief of complete paraplegia, cystitis, incontinence of urine and fæces, and extensive bedsores. No apparent immediate benefit followed the operation, but eight weeks later the cystitis had disappeared, some of the bedsores were entirely healed and all were better, and the general condition was improved. In fracture of the spine immediate operation is not indicated, as a considerable portion of cases recover under less dangerous methods of treatment. The continuance of symptoms is an indication for operation, as it has been conclusively shown that the relief of pressure, even after long continuance, may be followed by complete restoration.

CONCLUSIONS.

1. In fractures of the cervical vertebræ, there is indicated immediate reduction of any displacement by extension and manipulation under an anæsthetic, followed by continuous extension and immobilization.

2. In all fractures of the lumbar or dorsal spine, involving the bodies or the arches, reduction is effected, with or without the plaster jacket by the hammock suspension, preceded, if there is evident displacement, by extension under an anæsthetic.

3. When symptoms indicating injury of the cord persist without improvement, resection is indicated.

4. Immediate operation would be indicated when there is marked depression of the arches with symptoms of paralysis.

5. Long continuance of the symptoms is not in itself a contra-indication to operation.

6. We have, in suspension, the means of alleviating some of the sequelæ of fracture of the spine.

DR. H. H. SMITH, of Philadelphia, read a paper on

CONCUSSION OF THE SPINE IN ITS MEDICO-LEGAL ASPECTS.

The legal liability of corporations and capitalists for claims of pecuniary damages for injuries received by individuals through a claimed negligence, was established by the English Parliament, in 1846, and is known as Lord Campbell's Liability Act.

A refusal to pay often carries the claim into court, and the medical testimony often becomes the turning-point of the case. A medical expert should, therefore, endeavor to hold the scales so level that the preponderance of the medical facts may correctly incline the balance to the right side. The following questions were presented:

1. Can any force be so applied as to produce concussion of the spinal cord and its nerves?

2. How are the normal functions of the cord disturbed by such injuries?

3. What pathological changes on the cord are found as due to its injury or disease? After answering these questions, the following conclusions were drawn:

1. Concussion of the spinal cord is no longer doubtful, but may occur from any marked violence, there being nothing peculiar in the application of force to the body as the result of railway derailment or collision.

2. The pathological changes noted in the molecular structure of the cord, as the result of shaking, etc., when attended by paralysis in any degree, may be due to hemorrhagic effusions, softening, and localized or limited atrophy.

3. The possibility of pre-existing neurasthenia, hysteria, or fraud, should be carefully noted in forming a diagnosis.

4. The prognosis should be guarded, especially in cases claiming permanent disability, as recoveries or marked improvement in a few weeks are recorded, even after the occurrence of paralysis.

5. No physician should go into court and swear that a plaintiff has had a concussion of the spine or its nerves

unless he has proved the disturbance of the normal functions of the cord as shown in sensation or motion, or both, and that the symptoms appeared soon after the injury.

Dr. Herbert Judd, of Galesburg, Ill., following Dr. Smith, said: It is demanded by the honest business interests of the country, by cities, by transportation, mining, and manufacturing companies, and by all employers of laborers, that the subject of spinal concussion receive the most thorough attention at our hands. If we do not expose the cheats and frauds, and protect the deserving claimant, who can do so? That cities and corporations are robbed of vast sums of money yearly by malingerers, aided by ignorant or dishonest surgeons, we all know to be true. This subject has reached this disagreeable status: A person can claim to be injured in a collision of trains, or by other accident. No objective symptoms or signs can be discovered, nor, upon close examination, found. Nevertheless, such person never fails to find abundant medical testimony, and the assistance of friends, which, with the required legal talent, will be sufficient to successfully prosecute a suit. Especially is this true when the defendant is a corporation. Such cases can be, and are, based upon and carried to the end upon only a few vague subjective symptoms, every one of which depends alone upon the word of the claimant who seeks damages.

It is said, and it is probably true, that more people are injured every year by riding in carriages and by farm-work than by railroads, yet injuries that are pure accident, or injuries where a corporation of some character is not at fault, never result in concussion of the spinal cord. And where injuries occur through accident for which no liability can attach, we find no malingerers.

A number of interesting cases were then related in detail.

Dr. Charles C. Hunt, of Dixon, Ill., read a paper on

SUSPENSION AND EXTENSION IN THE TREATMENT OF SCIATICA.

The three cardinal points in the treatment of sciatica are rest, extension, and suspension. He cites five cases, picked at random from a list extending over a period of five years. Recovery took place in from two to six weeks in all. The apparatus used was the old Hodgen splint, which should be worn at least two weeks, and the adhesive straps left on two or three weeks longer, so that extension can be put on after the patient goes to bed nights, or in case of accident or over-exertion. The paper consists of a few interesting clinical facts, no pretension being made to discuss etiology, pathology, diagnosis, or general treatment. A cut of the apparatus, with description and method of applying it, accompanies the paper.

Dr. Maurice H. Richardson, of Boston, reported a series of

FIFTY-SEVEN OPERATIONS ON PERIPHERAL NERVES,

taken from the records of the Massachusetts General Hospital, of which twenty-eight had been performed by himself.

Thirty-five cases of neurectomy for neuralgia were reported very briefly. Most of these cases were affections of the trifacial nerve. The earliest cases of trifacial neuralgia were treated by section of the motor nerve. This was probably done with the idea that pain was caused by facial spasm. These operations were unsuccessful. In the operations of later years one can observe a constantly increasing thoroughness and severity. In the beginning there was only a subcutaneous section of the nerve, while at the present time as much of the nerve-trunk as possible is excised. In obstinate cases the nerve is divided at the foramen of exit from the skull. The result of these operations has been an almost invariable temporary success; the period of immunity from pain lasting from a few weeks to several years, while in some a permanent cure has followed. The length of the period of relief bears some relation to the amount of nerve removed.

Several cases of

BUCCAL NEURALGIA

were treated after the method of Zuckerkandl, the main trunk of the nerve having been divided as it emerges from the space between the coronoid process of the lower jaw and the insertion of the temporal muscle. Several methods of operating on the inferior dental nerve were described, the most important of which was the total evulsion of the nerve by trephining over both dental and mental foramena. In one case, after dividing the distal end at the mental foramen, the whole nerve was drawn out of the dental canal by an intrabuccal incision, owing to the great difficulty of this operation, and interference with articulation following it. In one case the writer had trephined the lower jaw through the space occupied by the third molar tooth. In several cases the periosteum of the floor of the orbit has been raised and the superior maxillary nerve divided in the spheno-maxillary fossa, and drawn out of the infraorbital foramen; the distal filaments being twisted out of the tissues over clamp-forceps. This method seems preferable to Carnochan's operation of reaching Meckel's ganglion by going through the antrum. One of these cases was fatal.

Neuralgia treated by nerve-stretching, of which five were reported, all for sciatica, were, with one exception, failures. The experience of others, however, offers sufficient encouragement in obstinate cases. The experiments of the writer on the cadaver show that great force is necessary to produce any traction whatever upon the spinal cord. In some cases the nerve ruptures outside the pelvis, while in others it gives way at the intervertebral foramena. Nerve stretching as a means of affording relief, except in nerves containing important motor fibres, has little to commend it. Stretching should be combined with resection in all cases where the latter operation is performed.

Four cases of

MUSCULAR SPASM

had been treated by nerve-stretching. Of these, one was of the facial, two of the spinal accessory, and one of the lower intercostals. Temporary relief followed in the case of the facial spasm. The others were failures.

Two cases of spasmodic wry-neck had been treated by the writer by excision of a portion of the spinal accessory nerve. This method produced relaxation of the muscles and cessation of spasm. The best incision to reach the nerve is along the anterior border of the sterno-mastoid, the centre of which should be an inch and a half from the mastoid process. In the two cases reported it was reached through an incision an inch long.

Seven cases of suture of the nerves of the upper extremity were reported, in all of which, with one exception, there was more or less perfect restoration of function. An inch and a half of loss of nerve-substance can be made up by stretching. More extensive separation of the ends requires interposition of some connecting link, the best of which is catgut (*suture à distance*). The possibility of immediate restoration of sensation and motion was doubted; it not having occurred in the writer's experience. One must not be discouraged if there are no signs of improvement for a long time. In one case of secondary resection of the musculo-spiral nerve there was no evidence of motor restoration for three months, though the case resulted in a perfect cure.

Two cases of pain and of

PARALYSIS FROM PRESSURE

had been treated by incision and removal of exostoses and tumor, with permanent relief. In one, wrist-drop had been cured by relieving the musculo-spiral from compression between the aponeurosis of the triceps and an exostosis of the humerus.

Dr. W. O. Roberts, of Louisville, Ky., narrated three cases upon which he had operated during the last eighteen

months, for removal of the inferior dental nerve. The dental engine, with burr, was used in place of the trephine.

In the first two cases, incision was made through the soft parts down to the bone, along the outer border of the jaw along its entire length. The burr was applied at the mental foramen and carried along the whole length of the canal. After opening the canal the whole nerve was lifted out and removed entire.

In the last case (the third), an old lady, with a large mouth and the bone very much atrophied, an incision was made along the whole length of the jaw from the inner side of the mouth, and the burr of the dental engine run over the covering of the canal. On opening the canal, there was free hemorrhage, which was relieved in a short time by pressure.

The first case was lost sight of after four months. Up to that time there was no relapse. In the second case, operated on a year ago, there has been no return of pain. The third case was operated on ten days ago, and is too recent to judge of the ultimate result. It is more difficult to operate from the inside than from the outside of the mouth, but it is to be preferred when it can be done, for the sake of leaving no scar.

SECOND DAY, WEDNESDAY, JUNE 26TH.

DR. CHAS. B. PORTER, of Boston, read a paper on

EXSTROVERSION OF THE BLADDER.

The subject of the communication was the report of operations of two cases of exstroversion of the bladder —a congenital deformity in which the bladder, with mucous surface exposed, protrudes, hernia-like, in the lower hypogastric region. Its anterior wall and corresponding portion of the abdominal parietes are wanting, and usually the symphysis pubis. The urine dribbles from the ureters, or is ejaculated on coughing or sneezing. Its constant contact excoriates the skin of the genitals and thighs, and makes its possessor miserable, and the attendant foul urinous odor an object of repugnance to those about. The other parts of genito-urinary system are usually present in a more or less developed state. It will be interesting to spend a few moments in considering the evolution, so to speak, of operative interference to remedy this deformity. So far as I can ascertain, no operation for exstrophy was performed till the last half of the present century, when Mr. Lloyd, of St. Bartholomew's, in 1851, made an attempt to divert the passage of the urine into the rectum by passing a seton from the bladder through into the rectum, intending subsequently, after the fistulous tract was established, to close the gap in the abdominal wall, refreshing its edges, and uniting them by suture. His patient died on the fifth day, from peritonitis. Since Lloyd's unsuccessful attempt to establish communication with the rectum this has been accomplished by Simon. Holmes, in order to avoid a wound in the peritoneum, endeavored to establish a tunnel through the perineum with communication of the ureters with the rectum. Thomas Smith diverted each ureter into the colon of the corresponding side by successive operations. His patient died after the second. Until 1853 no successful attempt had been made to cover the exposed bladder by flaps, when, almost synchronously, Roux, Richard, Pancoast, and Ayers each performed a successful operation by transplantation of flaps of skin from the adjacent parts. In the adult, and especially in the male, the introverted skin grows its hairs, and the deposition upon them of the salts of the urine forms concretions that are analogous to stone in the bladder and produce similar symptoms. To reduce this reservoir to a minimum Dr. Henry J. Bigelow, of Boston, in 1876 dissected the mucous membrane from the exposed surface above a line drawn transversely across the ureters and turned a flap of skin onto the denuded surface, which united. The part below this line was covered by another operation. Trendelenburg, of Bonn, reported to the Sixteenth Congress of German Surgeons a number of cases by a new method.

In children, and he limits the age to those under six years, he performed section of the sacro-iliac synchondroses on both sides, and, by continued pressure, kept up by special apparatus, lessened the pubic hiatus to one centimetre. The bringing together of the refreshed edges of the bladder has been attempted twice, once unsuccessfully by a Strasbourg surgeon, and once successfully, in 1844, by Dr. Hal C. Wyman, of Detroit.

CHOICE OF OPERATION.

With regard to the choice of operation, the speaker thought that age and extent of the cleft must determine. Up to the present time no operation has attained continence of urine. The results of diverting the urine into the intestine are not encouraging. Diverting the urine to a central point in the abdominal wall does not commend itself, although no deaths had followed the four cases which the speaker had been able to collect. Trendelenburg has up to the present time achieved no more than the method by flaps, and any surgeon would hesitate to submit his own child to bilateral section of the sacro-iliac synchondroses as a preparatory step to the closure of the vesical cleft. In an infant or young child Wyman's method is, in suitable cases, the best. It is practically Trendelenburg's, minus the objectionable feature of the sacro-iliac symphyses. The method by flaps is adapted to both sexes and all ages. The surgeon before the operation should inform himself as to the condition of the kidneys, and constantly keep in mind the main result for which he is striving, namely, a free drainage of the urine; for, otherwise, the ordinary results from obstruction generally follow. These are dilatation of the ureters and destruction of the kidneys. None of the accompanying malformations contraindicate the operation. The development of prepuce and scrotum in the male, and the labia majora and minora in the female, furnishes the operator abundant material for the display of his ingenuity in arranging flaps.

All the general rules of plastic surgery hold in these operations. The flaps must be about one-third larger than the gap to be filled.

They must be arranged in such a manner as to furnish to the pedicles an abundant supply of blood.

During delays in the operation they should be covered with hot towels wet in an antiseptic solution.

They must be handled as little as possible, and rarely with forceps.

Any dragging on the pedicle endangers the vitality of the flap.

All bleeding must be arrested before the flaps are adjusted in position.

Light and gentle compression prevents any oozing between them.

The operation completed, they should be kept for many hours under moist, hot, antiseptic dressings.

Perfect antisepsis should be maintained throughout.

Two cases were reported, one of which was shown.

DR. DUDLEY P. ALLEN, of Cleveland, O., read a paper on

LITHOLAPAXY IN CHILDREN,

in which he said that this operation had now come to occupy a recognized position among the operations for stone upon children, and had achieved a great success.

He compared it with the operation of lateral suprapubic lithotomy, and pointed out the comparative merits of each operation. He also read letters from G. Buxton Brown, of London; Guyon, of Paris; Kerr, of Canton, China; and Petersen, of Kiel, Germany. Brown and Guyon are favorable to litholapaxy in children, under proper conditions. Kerr and Petersen had not attempted litholapaxy in children, always cutting; Petersen wrote especially of suprapubic lithotomy in cases when it was indicated; and Kerr, of the advantages of median lithotomy in small stones.

Dr. Allen's conclusions were that litholapaxy in children is adapted especially to medium and small stones, and that its especial advantages are :

1. The absence of a cutting operation, for dread of which patients frequently delay operation until the stones have reached a large size.

2. The short convalescence, averaging but a few days.

3. The absence of the offensive discharge of urine into the patient's bed, with its disagreeable and sometimes serious consequences. He also spoke of the absence of any risk to the reproductive apparatus, and the fact that boys' bladders were less liable to be diseased than adults', and consequently better able to withstand operation. He advocated treatment of the cystitis which accompanies stone by washing the bladder for a time after the operation, should this be indicated, and expressed the opinion that this would secure as beneficial results to the bladder as drainage by the cutting operation. He thought that, even if stone returned more frequently after litholapaxy than after lithotomy (as was not proved to be the case), this might be prevented by washing the bladder until its condition had become healthy, and should a stone return a second operation by litholapaxy would be easier than the first from the increase in size of the urethra with the age of the patient. In concluding his remarks he showed various instruments and stones removed by the operation.

Dr. W. T. Briggs, of Nashville, Tenn., read a paper on

THE CHOICE OF OPERATION FOR THE REMOVAL OF VESICAL CALCULI IN THE MALE.

There is no *best* operation for the extraction of urinary calculi. Every case of stone has its special indications, and the best results will be attained by the surgeon who has a thoroughly practical knowledge of all plans of operating, and who appreciates the paramount importance of selecting the operation best adapted to the case under consideration.

The data from which a choice is determined are :

1. The age of the patient.
2. Size and consistence of the stone.
3. The recurrence of the stone.
4. Condition of the urinary apparatus.
5. The results of the different methods.

It is almost universally conceded that in children under sixteen years of age lithotomy is one of the most successful of the major operations. The writer had operated on seventy-one children by the medio-bilateral method, and all fully recovered.

The writer thinks it may be safely concluded that in children under sixteen years of age the cutting method should be chosen, as the safer and better method of removing vesical calculi.

After puberty, and even in advanced age, crushing is the operation *par excellence*, and when the environments of the case have been favorable it has proven eminently successful.

The various methods of operation were discussed.

The medio-bilateral method is the choice of the writer, for the following reasons :

1. That it opens up the shortest and most direct route to the bladder, passing in a straight line from one-third of an inch anterior to the verge of the anus to the neck of the bladder; it facilitates the introduction of instruments and the extraction of the calculi.

2. It divides parts of the least importance. The incision following the median line does not encounter any structure of importance, nor does the slight bilateral section of the deeper parts do violence to tissues of vital consequence.

The following deductions were drawn :

1. No operation is adapted to all cases.

2. Litholapaxy is incomparably superior to lithotrity, and should always be practised in selected cases.

3. The suprapubic should be chosen for extraction of very large and hard stones.

4. The medio-bilateral should be chosen in all other cases.

In adult life the death-rates alter somewhat in favor of litholapaxy. As the prostate and urethra enlarge, and the parts about the neck of the bladder become more vascular, the danger incident to cutting through them increases. On the other hand, the increase in the size of the parts makes the performance of litholapaxy comparatively easy and safe. In old age the rates of mortality are overwhelmingly in favor of litholapaxy. While the dangers attending all the cutting operations have increased very greatly, the mortality after crushing is very little higher than it was earlier in life.

In childhood, it would seem wise to use litholapaxy for all small stones or stones of moderate size, and for stones of larger than this to do lateral lithotomy, except when they are very large, and then suprapubic cystotomy is to be resorted to.

In adults we are led to regard litholapaxy as the operation of choice for stone-removal. In old age the same indications are to be followed as in the adult, except that it is to be remembered that perineal incisions are especially dangerous in old men, and not to be undertaken for the removal of stone without urgent reasons.

These two papers were jointly discussed by Drs. Gouley, Sir James Grant, Tremaine, and Pancoast.

Dr. A. T. Cabot, of Boston, read a paper on

THE CHOICE OF OPERATION FOR STONE IN THE BLADDER.

In his opinion, we have in litholapaxy a choice for the removal of most stones. While this is the rule, there are exceptions to it, and the varying conditions surrounding stones in the bladder will now and then lead us to choose some other operation for their safest removal. In modern surgery the test of merit is looked for in results. No operation, however brilliant, can claim superiority over rival methods if its death-rate is higher than theirs. The best operation is the one that saves the most patients, unless some serious interference with bodily function more than counterbalances the gain in safety.

In children, judging from the results of mortality, there is little to choose between lateral lithotomy and litholapaxy. Suprapubic lithotomy is more dangerous.

Dr. Robert T. Morris, of New York, read a paper entitled

WHAT DRESSING SHALL LIE NEXT THE WOUND?

Vaseline or oil spread upon any textile fabric represents the worst type of dressing, because the unguent mingles with the discharges and retards organization; because the textile fabric entangles new epithelium-cells and connective-tissue cells, and because there is nothing in the dressing to prevent fermentation and wound-infection. Lint and cotton are even worse than textile fabrics.

The cerates spread upon textile fabrics are one point better, in that new epithelium and connective-tissue cells are not entangled in the mesh.

Balsams spread upon textile fabrics, or upon lint or cotton, are better than vaseline or cerate, because they may limit fermentation.

There are only two perfect types of dressing. The iodoform covering for small wounds represents one of these. Iodoform forms a thin, firm coagulum with lymph, and this is not easily attacked by micro-organisms. Beneath this coagulum the processes of repair go on smoothly in small wounds, even when a certain number of microbes are at work, because the iodoform neutralizes the ptomaïnes.

The other perfect dressing is the one suitable for larger wounds, and it possesses the following properties : First, smoothness and impenetrability to new epithelium and connective-tissue cells (Lister's protective oiled silk). Second, a bulky mass which is highly absorptive, to draw serum away from the wound, and to make it too dry for microbe food; and this dressing is charged with antiseptics to destroy micro-organisms (bichloride cotton or gauze).

ELECTION OF OFFICERS.

Dr. B. A. Watson, of Jersey City, was elected President, and Dr. William B. Deaver, of Philadelphia, Secretary.

Dr. J. Collins Warren, of Boston, read a paper on

THE MANAGEMENT AND TREATMENT OF LARGE HERNIÆ.

The very large herniæ appear to have a *raison d'être* in each case, that is, the patient usually suffers from some form of disability, which prevents him or her from exercising that control over a hernial tumor which an able-bodied and intelligent person is usually capable of doing. In a large number of cases obesity is a predisposing cause, especially in hernia in women. The type of man usually afflicted with a large scrotal hernia is twofold. Either he is a large, middle-aged business man, so engaged with his work, or of so callous a temperament, as to have neglected his disease until driven to treatment by fear of permanent disability; or, he is an old and feeble individual, or so obtuse as to be unable to manipulate the part so as to effect a reduction, or with sufficient intelligence to apply and keep in place a truss. Finally, we have children with congenital herniæ, whose position in the social scale is so lowly that the little patient has never been able to receive proper care. The cases narrated represented fairly well each type of this affection. No special plan of treatment has been adapted to them all, but each case has received such treatment as the special conditions governing it seemed to call for. Nine cases were related in detail. In none of these cases was a radical cure attained, but in all the patient has been satisfied with the result of treatment.

Dr. Henry O. Marcy, of Boston, read a paper on

THE RADICAL CURE OF HERNIÆ BY THE USE OF THE BURIED ANIMAL SUTURE.

Dr. Marcy gave a brief history of fourteen cases operated on within eight months, and since they embraced all the varieties of herniæ, they comprised of themselves a study of marked interest, and illustrated the author's methods of operating. The specimens of the hernial sac, and, in a few instances, contents, were of great value. They were exhibited especially to show the changes which take place in the peritoneal sac, and teach that at least in cases of old, large herniæ, it has become so intimately blended with the surrounding connective tissue, and is so deformed and devitalized as to be considered distinctively pathological and utterly devoid of value as an aid in the restoration of the parts. When thus changed it is clearly the duty of the surgeon to remove it. Dr. Marcy dissects the sac quite within the ring, making the neck tense by traction, and then with the double continuous suture, rendered possible by the eye of the needle being placed near the point, and known in surgery as the author's stitch, sews in an even seam in the line of the oblique opening across the mouth, and resects. The peritoneum thus reformed is carried quite within the ring, and in old, large inguinal herniæ the inner ring is closed from below upward by the double suture quite upon the cord. In this way the obliquity of the canal is restored, a step which Dr. Marcy emphasizes as of the first importance.

The pillars of the refreshened ring are now brought into apposition by the double continuous suture quite to the exit of the cord at the lower margin of the external ring. The external tissues are approximated in the same way by a layer of continuous buried sutures, and finally the skin is held in juxtaposition by a running blind stitch taken from side to side through the deeper layer of the skin. In this manner not only is the canal restored, but the tissues are held in close relation, bleeding rendered out of the question, and all pockets avoided for an accumulation of any secretion. On this account drainage is unnecessary, and the wound, which at every step has been under the protection of irrigation with mercuric solution, is at once dried, and sealed with iodoform collodion. Aseptic pain rarely is sufficiently severe to require opiates. The tissues are agglutinated without swelling, or even tenderness. If done as Dr. Marcy insists all operative wounds should be made, only under more aseptic precautions, the procedures which at first seem heroic and even dangerous are really safe, and to a good anatomist and practised surgeon, simple. This general method is advised for the different varieties of herniæ, and has given, in the experience of Dr. Marcy, most excellent results. He has now operated about one hundred times for the cure of herniæ, and a recent examination, as far as possible to trace results, gives about ninety per cent. of permanent cures. In no case has the danger line appeared to have been approached, except in strangulated cases, where the integrity of the intestine was involved. The author said that he believed he was the first American pupil of Mr. Lister, and soon after his return from Edinburgh he operated, inclosing the ring with catgut, because the patient was afflicted with a severe cough. The cure was perfect and other cases soon followed. Then a long and careful comparative histological study of animal sutures incorporated into the living tissues, followed with the demonstration that they were replaced by vitalized connective-tissue cells. His first studies were in 1870, and the priority of his method of operation has never been questioned. The importance of such a discovery is apparent in its general application to surgery, but nowhere of greater value than in herniæ. After a careful study of all the varieties of animal sutures, Dr. Marcy is satisfied that the tendon from the tail of the kangaroo is by far the best. The author said that he recently published a general treatise upon herniæ, and this paper embodied his more recent experiences.

Dr. Joseph S. Warren, of Boston, in discussing the paper of Dr. Marcy said: "I am aware of the claims for animal ligatures, but I have always feared their advantages might be too great, and the absorption claimed for them might be premature. In my own operations I use braided silk, and feel secure when the parts are approximated, they will stay so until united." Dr. Warren's peculiar way of stitching the ring was then described, and the needles which he uses shown.

Dr. John B. Deaver, of Philadelphia, read a paper on

THE RADICAL CURE OF HERNIA.

The operations of Macewen, Baker, Banks, McBurney, and others were described. The method which the author usually employs is Baker's, modified only in the introduction of the sutures after the manner of Macewen for closing the canal. He uses antiseptic silk sutures, and a few strands of chromicized catgut placed beneath the superficial set of sutures. The operation that he has done most recently is a modification of McBurney's, differing from it only in that the fundus of the sac is left *in situ*. This, of all operations, he considers the most rational and the least likely to be followed by a return of the hernia. This is the course also pursued in femoral hernia.

Dr. Charles W. Dulles, of Philadelphia, read a paper on

PROPERITONEAL HERNIA.

The subject of properitoneal hernia is so little known in the country that I believe there have been but three cases with this title recorded by American surgeons. One by the writer in 1886, the second by Dr. Hartley, of New York, and the third by Dr. Torrey, of Brooklyn. In a general way a properitoneal hernia may be said to be one which occupies an abnormal position within the abdominal or pelvic wall in front of the peritoneum. Lunenburg has suggested that the term præ-peritoneal would be more exact. A true properitoneal hernia lies between the peritoneum and the overlying mass of muscles, or when pelvic, the bones. There is also a form of hernia which occupies a position between the planes of the

abdominal muscles, which may be called "intermuscular," and another which lies outside of them and just beneath the skin and superficial fascia. The history of cases of this sort seems to be that they are for the most part originally inguinal hernias, and often accompanied by an undescended testicle. After occupying the inguinal canal for a certain time, the obstruction offered by the incarcerated testicle, or sometimes by a truss, forces the protrusion, under a strain, out of the canal and into the loose tissues between the peritoneum and the muscles, or between the muscles themselves, or between the whole mass of muscles and the skin and superficial fascia. They usually occupy a position above and parallel to Poupart's ligament, and stimulate enlargement by hydrocele of the spermatic cord. They are sometimes so large that they overlap Poupart's ligament and hang down over the thigh. They often extend upward and outward as far as the anterior superior spine of the ilium. The treatment is usually by cutting operation. I have found the record of a case which was successfully treated by taxis, and my investigations have led me to the belief that this is the most dangerous way to treat it.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

First Day, Tuesday, June 25th.

W. H. Wathen, M.D., Chairman.

Dr. H. R. Storer, of Newport, read on the subject,

BENJAMIN RUSH AS AN OBSTETRICIAN.

In studying medical numismatics he had been struck with the importance of the work of Benjamin Rush in the department of obstetrics. Fifty years ago the idea of the induction of anæsthesia in obstetrics was

AN AMERICAN IDEA

in the mind of Rush, and he, after observing a painless delivery while the mother was in an epileptic fit, and another while the mother was intoxicated, prophesied the finding of a drug which would relieve the pains of childbirth. The writer brought this subject up before this section because he thought Rush a man who deserved well of the section on obstetrics, especially as an effort was now being made to raise him a monument. On resolution the paper was referred to the general session when the subject came up.

BORACIC ACID IN GYNÆCIC PRACTICE

was the subject of a paper by Dr. W. W. Potter, of Buffalo, N. Y. The doctor was first brought to the use of boracic acid by the fact that iodoform in him always caused a very troublesome dermatitis. He found boracic acid valuable when the medication was required to remain longer in the vagina than it was possible for tampons to remain on account of the decomposition. He then described minutely his method of applying the remedy, which consisted of an injection, a drying of the vagina, the application of the boracic acid with alternating layers of cotton. He, in some cases, allowed this dressing to remain a week, and thought once a week often enough for these applications. He has had good results with boracic acid after plastic operations. In these cases he leaves a rope of borated cotton hanging from the os over the perineum.

He considered boracic acid a remedy of great value in sterility due to acrid secretion, which destroys the fecundating power of the sperm. It is one of the best powders to render operative wounds in the genital tract aseptic. Boracic acid is suited to many gynæcic uses where an antiseptic is required. It can claim superiority over the vaginal tamponnement by reason of odorless, colorless, non-irritant chemical properties; these admitting of its frequent liberal and prolonged treatment.

Dr. William H. Taylor, of Cincinnati, reported

A CASE OF ECTOPIC GESTATION SUCCESSFULLY TREATED BY GALVANISM.

The great practical importance of extra-uterine gestation, and the prominence it now holds as a topic of discussion, he thought, justified his contribution. The diagnosis being difficult, the first essential interest centres about this point. The doctor then gave a concise review of the latest published utterances on the subject of diagnosis and symptomatology. His case was then reported to show how clearly it followed out the symptoms, and read in brief, as follows:

Mrs. W—— has borne three children, the last two and a half years ago, since which time menstruation has been regular and normal till recently, and she has been in good health. She menstruated in September, but missed her October menstruation entirely. She noticed abnormal desires for food, which led her to suspect pregnancy. October 30th she had a slight discharge of mucus tinged with blood, which continued till November 15th. The amount and character varied; when the flow was slight, it was dark and offensive. She grew better till November 29th, when, without obvious cause, she was seized with intense pain in the lower part of the abdomen, which compelled her to remain unmoved in a semi-flexed position till carried to her bed. She vomited violently, had intermittent pain with a free flow of blood. The phenomena of shock were so severe that for twelve hours death seemed imminent. Her highest temperature was 99 degrees. In four days she was much improved in all respects, and the flow of blood had ceased. December 13th she discharged what her physician said was fœtal membranes, since which she has lost no blood.

December 20th she had a second attack of violent pain, not so severe or protracted as the first, with no flow of blood. Since the beginning she has been subject to brief severe pains in the iliac region, produced by any exertion.

Her physician suspected extra-uterine pregnancy, and Dr. Taylor saw her the first time January 3, 1889. She was mentally and physically depressed, and sure her abdomen was growing larger. She had no mammary signs of pregnancy, though perversion of appetite continued. Abdomen tender to the touch, pain increased by deep pressure, no tumor detected by palpation, auscultation negative; vaginal examination showed the uterus deflected to the left, os patulous, not much enlarged, but, as the introduction of the sound caused much pain, the cavity was not explored. To the right of the uterus and apparently loosely connected with it, was a firm, irregular oval mass the size of the fist, slightly movable and not very tender, with a feeling of pressure on the rectum. From the history given, this tumor had probably grown during the past few weeks.

During the ensuing two weeks the continuous current was applied six times by means of a ball electrode in the vagina, and twice with sponge on surface of abdomen. Vesication occurred, and a large wire gauze was substituted. From eight to twenty cells of a Waite & Bartlett's battery were used, and under anæsthesia the current was carried to one hundred and twenty-five milliampères. A very remarkable effect mentioned by the patient was, that from the commencement of her sickness her extremities had constantly been cold and clammy, but from the first application of the battery they had grown warm.

She left the city January 19th, at which time her general health was much improved and her normal appetite had returned.

February 25th.—The tumor has decreased, not painful, uterus somewhat retroverted.

April 11th.—Has gained in weight, no pain, menstruation normal again.

All are aware of the diversity of opinion that exists as to the relative value of electricity and laparotomy in the early treatment of ectopic gestation. Granting the cor-

rectness of the diagnosis, he felt warranted in claiming success by the former treatment in his case.

THE CHAIRMAN then delivered his address, entitled,

THE PATHOLOGY OF ECTOPIC PREGNANCY AND PELVIC HÆMATOCELE.

The speaker considered of no practical value everything written on the subject of ectopic pregnancy prior to the year 1880, and passed it by. He considered that the ovum was never impregnated in the uterine cavity, and thought that the conjugation of the male and female elements must take place before, or just after, the ovum enters the tube. Ectopic pregnancy is always primarily tubal, with the possible exception of ovarian pregnancy. Abdominal pregnancy cannot occur except as a result of primary or secondary rupture, and if the villous or placental attachments are destroyed the ovum immediately dies, because it cannot form secondary attachment to other structures. If in rupture into the peritoneal cavity the ovum retains villous or placental attachments, it may be possible under certain conditions for the pregnancy to continue, though not probable. If the amnion is ruptured in the early months the embryo or fœtus will die. So-called interstitial pregnancy does not always, though usually, rupture into the peritoneal cavity. If we define pelvic hæmatocele as an encysted or confined tumor formed of blood, then intra-peritoneal hæmatocele is not possible. Then followed an extensive argument upholding these propositions advanced concerning ectopic pregnancy.

The intimate relations existing between pelvic hæmatocele and ectopic pregnancy was his reason for considering these two subjects together in his address. Nearly every author who has written on this teaches that blood may accumulate in the peritoneal cavity, and become rapidly encysted and fixed by the effusion of a layer of lymph exudations. The author did not adhere to this belief. He thought it impossible. If in suppuration the fluctuation can be distinguished through the vagina, it is best to enter the tumor through the vaginal vault; but if no fluctuation can be discovered, but is felt above the pelvis, laparotomy should be done.

SECOND DAY, WEDNESDAY, JUNE 26TH.

ELECTION OF OFFICERS

resulted as follows: For Chairman, Dr. W. W. Potter, of Buffalo, N. Y.; for Secretary, Dr. Joseph Hoffmann, of Philadelphia.

DR. HENRY O. MARCY, of Boston, contributed a paper on

CHRONIC INVERSION OF THE UTERUS,

with illustrations, demonstrating a new method for its cure. After sketching somewhat briefly the history of chronic inversion of the uterus and its etiology, Dr. Marcy discussed more fully the pathological changes that ensue. These were illustrated by a considerable number of crayon sketches from the monograph of Crosse, of more than a century ago, from McClintock, Martin, Barnes, and others. Until 1858, when the late Dr. James P. White, of Buffalo, first published his monograph upon "Chronic Inversion of the Uterus," and its reposition by continued elastic pressure combined with taxis, no systematic effort for the cure of this distressing accident had been advocated. Although cases of reposition were on record, the profession had considered them as

ACCIDENTAL CURIOSITIES.

The methods of Tyler Smith, Wing, Barnes, Thomas, and Aveling of reduction by continued elastic force were analyzed, and shown, in the opinion of the writer, to be at the most modifications of Dr. White's original method, and often of doubtful value. No new principle being involved, undoubtedly to Dr. White and to America should be accredited the modern operation by which, at the least, a large proportion of cases of chronic inversion of the uterus can be safely restored, giving to the patient original health and vigor. Dr. Marcy somewhat critically reviewed the experience of Dr. Thomas and his followers, in first

PERFORMING LAPAROTOMY IN ORDER TO DILATE THE CERVICAL CONSTRICTION,

and thus aid in the reposition of the organ. This he admired as an evidence of the brilliant originality and fertile genius of this distinguished author, yet he could not help the consideration if it was based upon sound mechanical and physiological law. This seemed especially to be called in question by the analysis of the recent experiences of Dr. Mundé, of New York, where, after repeated dilatation to the uttermost, the cervical closure immediately followed, like the grip of a vice, which rendered every effort at reposition abortive. Again, although no harm is reported to have been occasioned by the severe pressure to which the Fallopian tubes are necessarily subjected, or mention made of the same by any author, it seems hardly possible to consider that these important organs can escape serious damage by such manipulation.

Twelve years ago, after a careful study of the subject, Dr. Marcy believed that all the above methods were essentially faulty, in that the fixation of the counter-opposing force was uncertain and doubtful. By the method of Dr. White counter-pressure over the abdomen was, in a measure, relied upon, but the method of all the other authors for the application of continuous elastic force, often applied for days together, was only the vaginal attachment of the cervix and pressure upon the neighboring organs. It seemed to him both simple and rational to utilize a single force in the power applied at the same time continuously upon both cervix and fundus, and in this way to convert the constricting force into a power to aid still further in its reduction. To this end he passed long ligatures of coarse silk deeply through the cervical tissues which he determined were possessed of ample resisting power. The perfected instrument for the reduction of the inverted uterus which was exhibited by Dr. Marcy seems simple and yet possessed of sufficient power. The distal end consists of a cup-shaped extremity for the reception of the fundus. The deep cervical ligatures, four in number, are attached to a movable sleeve adjusted upon the shaft of the instrument. By means of a screw in the handle pressure is brought to bear upon a concealed spring, and the force applied is at once determined upon a graduated scale, showing the amount of pressure. Dr. Marcy has but one case to report, which came under his observation within the year. Three months after delivery, a prolonged effort at taxis proved unavailing. By the method above described Dr. Marcy completely

RESTORED THE UTERUS IN TWENTY-SIX MINUTES,

under a maximum force of eight pounds. The sutures were easy in application, they held perfectly, and the operation was conducted throughout under irrigation, and afterward the vagina was lightly tamponed with iodoform cotton. The patient made a good recovery and continues well.

DR. A. P. CLARK, of Cambridge, Mass., commended the instrument of Dr. Marcy and his method of treatment.

DR. CLEVELAND, of New York, had seen but one case in fifteen years' connection with the Woman's Hospital. This case had a fibroid, after the removal of which reposition was rather easily made. He thought the instrument presented to-day superior to any he had seen.

DR. MONTGOMERY read a paper on

THE INDICATIONS FOR, AND LIMITATIONS OF, THE OPERATION FOR THE REMOVAL OF THE APPENDAGES,

urging the importance of their more accurate determination. The operation was introduced on three lines of indications: 1. To bring about the menopause in what

are known as the neuroses. 2. For the relief of symptoms due to pathological changes in the tubes and ovaries. 3. To establish the menopause in grave and threatening disease in the uterus. The aims of the operation as here expressed are legitimate when the indications are correctly interpreted. The indications may be divided into physiological and pathological: the former comprising operations done to establish the menopause, without reference to the pathological conditions present; the latter, primarily, for the removal of diseased organs, and may be partial or complete. The operation is justifiable in mania and epilepsy, when they can be closely associated in origin, or subsequent occurrence, with the menstrual function. It affords no relief in nymphomania, as the ovaries and tubes do not govern the sexual appetite, nor the power to gratify it. In hysteria it should be a *dernier ressort*, and then performed only after the patient has been fully informed of the influence it is likely to exert upon her future life. Its value in uterine myomata cannot be questioned, but the exceptional cases in which the flow is not arrested make it advisable, when feasible, to do vaginal hysterectomy.

Suppurative inflammation of ovary or tube is a positive and imperative indication. The frequency of the association of this with peri- and para-metritis makes it good practice to advise exploratory incision, with a view to removal of the offending organs in recurring attacks of either of the latter diseases.

Chronic inflammation of the tubes and ovaries is not necessarily an indication for operation. Polk and Imlach have done good work by demonstrating that many cases can be restored to health by separating adhesions and shortening the broad ligaments.

In conclusion, he urged that: 1. The operation for the removal of the appendages should be promptly performed in every case in which it is evident that relief cannot be otherwise obtained. 2. It should be considered a *dernier ressort* where there is a hopeful prospect of restoration to health by less dangerous methods, or without the sacrifice of the reproductive function. 3. Its consideration should be dismissed in every case capable of restoration to health by other plans of treatment.

Dr. Joseph Price, of Philadelphia, reported

A SERIES OF FIVE HUNDRED CASES OF CONFINEMENTS IN A MATERNITY HOSPITAL,

in which he gave the minutiæ of the treatment in a maternity hospital in Philadelphia with which he is connected. The treatment was after the highest and most approved method of cleanliness. He said the talk a few years ago was to abolish the lying-in hospitals on account of their terrible mortality. The tables are now turned, and the greater mortality is in the private practice. He wished to invite a discussion which would lead to more refinement in the technique of the treatment of labor.

Dr. Thomas Opie, of Baltimore, had visited the maternity spoken of and found it unique. He had great hopes for the future in this line.

Dr. Hurst, of Philadelphia, considered the plumbing of great importance. In an infirmary where he practised he had the closets put in towers, where the ventilation was excellent, and had within twenty-four hours a fall of temperature. He had found the mortality to be very great in tenement-houses where the plumbing was at fault.

Dr. W. T. Lusk, of New York, thought that the practitioner should hold himself responsible for the plumbing of the house in which he delivered patients.

Dr. Henry D. Frey, of Washington, D. C., read a paper on the subject of

THE APPLICATION OF THE FORCEPS TO TRANSVERSE AND OBLIQUE POSITIONS OF THE HEAD; DESCRIPTION OF A NEW FORCEPS.

He had sent circular letters addressed to the teachers of obstetrics in the United States, asking their practice in these conditions and the kinds of instruments they used. He gave their replies in a tabulated form. He thought the obstetrician should not content himself with one form of instrument, but be expert with several, so as to be able to use them as occasion demands.

Dr. William S. Stewart, of Philadelphia, read a paper entitled

WHEN SHOULD THE OBSTETRIC FORCEPS BE USED, AND WHAT FORM OF INSTRUMENT IS REQUIRED?

They should never be used to save time, no difference how busy the practitioner was, nor to satisfy nervous women or fidgety nurses. We should use the form of forceps best fitted to the particular case. He presented a pair of his make which he had used in a number of cases with good success. In these either blade can be introduced first, the child is not disfigured, and they do not slip.

Dr. Joseph Taber Johnson, of Washington, D. C., thought that woman in childbirth should be given all the skill extant, and recited the glories won by the forceps in the lying-in chamber.

Dr. Theophilus Parvin, of Philadelphia, considered this the revival of an old instrument which will also become an old instrument, and be revived by someone else. He thought it dangerous, that it would crush the child's head. It was an ingenious, complicated instrument, but we want simplicity. The power is too far remote from resistance, for the nearer you can get a horse to the load he pulls, the better he will pull.

Dr. Joseph Price, of Philadelphia, looked upon the forceps of Dr. Stewart as dangerous instruments.

Dr. Thomas Opie, of Baltimore, read a paper on

THE KINSHIP OF OBSTETRICS AND GYNECOLOGY.

He reviewed the history of obstetrics from the earliest times, and always found it closely allied to the diseases of women. He found obstetrics and gynecology bound together with hooks, forceps, and specula of steel. A few years ago the opinion was that lying-in hospitals should be abolished. Now they challenge private practitioners with their results. Gynecology has grown out of obstetrics—an obstetric development; they are separated but not divorced, they interdigitate. The gynecologist should know obstetrics, and the obstetrician should be a good gynecologist. The very nature of the gynecologist insists that he should be first an obstetrician. To know the abnormal he should first know the normal. United they stand like Siamese twins. To separate them would inflict irreparable injury. The obstetrician has long cried honestly against fœticide, that old commandment, Thou shalt not kill, and the gynecologist against Onanism, the limitation of families, and sterility. He considered the thought of breaking up this long-standing alliance between obstetrics and gynecology, which had taken the form of a resolution before the general session, sinful.

Dr. Joseph Taber Johnson, of Washington, D. C., then read a paper entitled

TETANUS FOLLOWING OVARIOTOMY.

So rare a complication of ovariotomy, and the recent interest in the transmissibility of tetanus, was his reason for bringing this case before the Section. The history of the case was, in brief, as follows: A solid growth, sarcoma of the ovary, the size of a child's head, was removed. The patient, who was aged sixty-one, recovered rapidly and without complication till, on the morning of the thirteenth day, she developed tetanus, and died on the third day of the disease and fifteenth day of the operation. She exhibited numerous muscular spasms, mind clear, jaws locked. The convulsions were especially active in the neck and back, and during their presence the pulse was notably weaker. The patient died of what appeared to be heart-failure. No other patient in his hospital was affected with this disease, and it was the only case which had occurred in it since the eighteen months it has been in operation. It seemed to him that there

was probably no outside influences. His horses were healthy and he does not drive them himself, so thought there could be no opportunity in this way. In all cases of inoculation the disease is contracted and the patient dies in a very few days, generally not more than three. His patient got along well till the thirteenth day. The author's case, the case of Homans, of Boston, and that of Richelot, of Paris, are the only cases of this complication he could find. The room in which the author had operated was thoroughly disinfected.

THE EQUINE ORIGIN OF TETANUS

has been thoroughly discussed by Verneuil, of Paris, and much interest brought out by his investigations. Tait thinks tetanus will continue to be a complication of ovariotomy, and one which we can hardly explain or eliminate. The practical point of the paper was to draw attention to the infective nature of this disease. He advised that care be taken as to infection, especially with horses.

This paper was discussed by Drs. Polk, of New York; Parvin and Price, of Philadelphia; and Gordon, of Portland, Me.

SECTION ON STATE MEDICINE.

First Day, Tuesday, June 25th.

J. Berrien Lindsley, M.D., President.

Dr. John B. Hamilton, of Washington, read a paper on

INTERNATIONAL COMITY IN STATE MEDICINE,

in which he referred to the international sanitary conferences which have been held in Vienna, Constantinople, and elsewhere. The practical results of these conferences have as yet been slight; but the mere fact of the calling of them together is an evidence that nations are waking up to a realization of the necessity of undertaking measures for mutual protection from disease. One of the absolute rights of states in the unwritten law of international relations is that of self-protection, and this includes the right of preservation from epidemics. The speaker referred with approval to the resolutions of the Montgomery Sanitary Conference Association, and asked that the Section adopt them as its own, and recommend them to the general body. These resolutions were to the effect that any nation having plague-centres within its limits should adopt measures to prevent their extension abroad.

On motion, the Section endorsed and adopted these resolutions.

Dr. W. C. Rives, of New York, followed with a paper on

THE IMPORTANCE AND ESSENTIAL NEEDS OF LOCAL BOARDS OF HEALTH.

The speaker said that it is to local and not to State boards that we must look for the most effective work. Boards of health should be established in all cities, towns, and incorporated villages, and they should have full powers to insure the carrying out of their recommendations. There were yet many obstacles in the way of a full realization of the wishes of sanitarians in this respect. There was a prejudice in the minds of many people against boards of health, and it should be the endeavor of all—physicians, clergymen, the press, and health boards themselves—to arouse a healthy public sentiment in favor of the establishment of local health boards.

Dr. N. S. Davis, of Chicago, then read a paper entitled

THE AMERICAN MEDICAL ASSOCIATION AND ITS RELATIONS TO THE PUBLIC HEALTH,

in which he recounted the work of the Association in this respect in the past, and showed that sanitary matters were considered of paramount importance in the early history of the Association.

Colonel George E. Waring, Jr., of Newport, read, by invitation, a paper entitled

MODERN SANITARY CONDITIONS.

The speaker estimated that the institution of proper sanitary methods throughout the country would result in the saving of over three hundred and fifty thousand lives every year, taking no account whatever of the amount of misery and loss of productive labor, from preventable sickness, that would be done away with. A proper application of the arts of the sanitary engineer would suffice, therefore, to save to the country one thousand of its citizens every day, an estimate based upon no untried conditions, but resting upon the results already attained. He then referred to the relations of the biologist and sanitary engineer. Formerly the engineer's work was largely empirical, but now the biologist, in his researches into the cause of disease, had discovered the reason of the engineer's success. The two professions should work in harmony, and the labors of both were needed to effect the necessary reforms and to bring about the prevention of preventable diseases.

Dr. Baker said that there were some diseases whose spread was not prevented by the labors of the engineer, by drainage, and the removal of excrementitious matters. For the prevention of these diseases, of which small-pox and scarlet fever might be mentioned as types, there was need of isolation and disinfection, and these should not be overlooked by the sanitarian.

Colonel Waring said that he had purposely confined his remarks to the work of the sanitary engineer and to the diseases preventable by his art, and had refrained from touching upon what was more strictly within the province of the physician.

Dr. Perry H. Millard, of St. Paul, Minn., then presented the

REPORT OF THE COMMITTEE ON UNIFORM MEDICAL LEGISLATION IN THE UNITED STATES,

and read a paper entitled

MEDICAL LEGISLATION IN THE UNITED STATES.

In this he reviewed briefly the progress of medical registration laws in the different States of the Union, stating that the best of these laws at present were to be found on the statute-books of Minnesota, Montana, Virginia, and North Carolina. Strange to say, or sad to say, opposition to effective laws regulating medical practice had come in no small part from the medical profession itself, and from the officers of teaching bodies. Now, however, in Minnesota at least, the profession was doing much to aid the proper execution of the law. As a direct result of the law now in force in that State, there was there a smaller proportion of physicians to the population than in any other State of the Union.

SECTION ON DISEASES OF CHILDREN.

First Day, Tuesday, June 25th.

J. A. Larrabee, M.D., Chairman.

The Chairman called the Section to order, and read an

ADDRESS ON PÆDIATRICS,

which he said is not a forced specialty, as the diseases of children require particular study. He deplored the fact that so many practitioners are so unfamiliar with the symptomatology of infantile disorders. He considered that, from a proper deliberation on the subjects connected with diseases of children, wise and wholesome laws would originate to prevent disease. Infantile mortality, from preventable causes, is far greater than it should be. The Chairman expressed the hope that the Section would formulate and adopt some resolutions prohibiting the publication of any statements, either laudatory or condemnatory, of any proprietary preparations of infant foods.

Dr. T. B. Greenley, West Point, Ky., read a paper on

THE MANAGEMENT OF INFANTS DURING THE FIRST YEAR.

The paper dealt almost exclusively with gastro-intestinal disorders. The author spoke of the predisposing causes of mortality—intemperance, syphilis, etc. In feeding children he believed that pure cow's milk is better than the diluted milk. He objected to the use of starchy foods. If a wet-nurse be selected, she must be carefully watched, as she may neglect her foster-child, or administer an opiate or alcohol. Dr. Greenley considered that mothers who allow their infants to be nursed by hired women are often guilty, unintentionally, of infanticide.

Discussion was participated in by Drs. Sears, Whitney, Watson, Christopher, Brush, Latimer, and others.

Dr. E. F. Brush, of Mt. Vernon, N. Y., read a paper entitled

COW'S MILK FOR INFANT FOOD.

Dr. Brush commenced by saying that the medical profession was agreed that nothing equalled good cow's milk as a food for infants, and therefore it was to be regretted that attention had not been given by the profession to reforming the breed of cattle and the handling of milk, than to the question of substitutes for it. In milk for infant feeding there should be considered, 1, the variety of fats; 2, the amount of albuminoids; 3, the amount of salts; 4, the handling of the milk; and 5, the health of the cow. 1. As regards the fats, he pointed out that the usual processes of chemical analysis led to an underestimate of the fats in cow's milk, and that of these fats we have no late authoritative analysis, a neglect on the part of chemists which leaves us in doubt as to which of the fatty acids are the mischief makers in milk. These fatty acids have more to do with the development of poisons than have the albuminoids, and are the cause of digestive derangements. 2. The albuminoids vary considerably with the time or habit of extracting the milk, milk extracted every two hours not being likely to possess as much or as ripe albumen as that drawn off every twelve hours. In health the albuminoids are constant, but materially affected in disease. This change is not surprising when we examine the mammary sources of milk in disease, for then there are found inflammations, calculi, clots of fibrin, etc., while the gland is at the same time subject to infiltrations, tubercular deposits, and eruptive diseases. In all cases any variations in the amount of albuminoid must be ascribed to sickness. 3. The salts also have not lately been determined by chemists, and we do not know how constant the occurrence of these salts may be, though we can assert that they are influenced both by the health and the food of the animal. Hence the land on which a cow is pastured will indicate fairly what we may expect to find as salts.

THE NUTRITIVE VALUE OF THE SUGAR IS OVERESTIMATED,

as is shown by the milk of carnivorous animals. Condensed milk, or concentrated sugar of milk, is not to be recommended as an addition to milk, but cane-sugar should be preferred. The chemist's ideal food is a failure, and the idea that milk must contain such and such constituents in such and such proportions is a popular error. 4. The cow must be studied, "for milk is the scavenger of the cow's body," and if it does not nourish the infant she is sick, or the milk badly handled. A faulty condition of the cow is indicated by the albuminoids, bad food by the fats and salts, and bad handling by the ptomaïnes. The cow has an abnormally high temperature, her organs of generation are in unnatural activity, and she is made a machine for producing milk. It is no wonder then that she is, as a rule, an unhealthy animal. This delicate animal is rarely, owing to the low price of milk, fed properly, and the same cause compels the farmer to utilize every drop of milk, be the cow sick or well. Good food is the prime essential for producing good milk. 5. Milk is affected by its surrounding in the cow-house, and the method of

GETTING RID OF THE ODOR BY SALTPETRE

cannot be too severely censured, for the addition of the nitre united with the glycerides may produce poisons approximating to tyrotoxicon. No chemical substance should ever be added. Milk should not be conveyed a long distance, for travel deteriorates milk. Light, like heat, hastens decomposition, therefore glass bottles should not be used.

The milk ought not to be given to the infant warm, for then it coagulates like too old milk. Sterilized milk may be employed if we abandon all hope of improving the quality of milk.

To remedy these evils we should have a better cow, one not closely inbred, well fed with good sound food, and well attended to. The cheapness of milk is the reason why we have not better milk, and the inferior milk suggests the use of substitutes. If the price of the latter were added to the price of such milk, the extra money would enable the farmer to buy better cows and better food, and improve the quality of his products. This he ought to be compelled to do. Let us not recommend patent baby foods, but good, high-priced milk, and then if any trouble arises we can lay the blame on the milkman. Dairies for supply of infants' food should be under strict sanitary supervision. Such an ideal dairy should consist of spayed cows.

Dr. J. A. Jeffries, of Boston, spoke of the varying quantities of albuminoids and fats, as shown by Dr. Rotch's investigations. He thought milk-sugar preferable to cane-sugar in preparing milk for children. He would not advocate the sterilization of fresh milk, but would do it if the milk had to be kept.

Dr. Christopher, of Cincinnati, said that

MILK FROM SLOP-FED COWS

shows greater quantity of cream, but that it undergoes decomposition rapidly. He thought that the ptomaïnes are the cause of poisoning, and that the fats cannot produce them.

Discussion was also participated in by Drs. Early, Sears, Gates, Sheldon, and Latimer.

Dr. Brush, in closing the discussion, said that prepared foods of all kinds, even if only sterilized milk, always take a low place as nourishment compared with fresh milk. He stated that he can feed cows so as to increase the fat, but cannot increase the albuminoids. The albuminoids change very quickly when the cows are febrile.

Second Day, Wednesday, June 26th.

Dr. Max Einhorn, of New York, sent a paper which was read by its title,

THE TIME OF RETENTION OF FOOD IN THE INFANT'S STOMACH.

Dr. N. Guhman, of St. Louis; the paper was read by title,

SUMMER DIARRHŒA AND DYSENTERY.

Dr. Steele Bailey, of Stanford, Ky.; paper read by title,

CHOLERA INFANTUM: ITS ETIOLOGY AND TREATMENT.

Dr. Peter Hooper, of Philadelphia, read a paper entitled

INTESTINAL DISEASES OF CHILDREN DURING HOT WEATHER.

The author considered the causes of these diseases as mainly heat, impure air, and improper food. He believed the local abstraction of heat from the bodies of children suffering from entero-colitis or gastro-enteritis as productive of good. Cold water and ice internally, and cold compresses to the head he considered beneficial. He also believed in cooling the sick-room artificially by the use of large pieces of ice. The author gave the history of

a baby aged eight months, where a temperature of 109⅘° F. in the axilla was reduced in half an hour to 105° F. by the application of ice to the spine. The severe nervous symptoms were relieved by this treatment, though no medicine was given. Some entero-colitis followed the acute attack, but the child was always more comfortable when cold was used internally and externally.

In speaking of the use of milk-foods, the author related as his experience that the children who use them do not grow so strong, so muscular, or so rapidly as they should. In cases of failure of mothers to nurse their children he advised the use of sterilized milk.

The author mentioned as the possible treatment of the future in cholera infantum the opening of the abdomen and washing out of the intestinal tract. The use of inunctions of olive-oil were spoken of as beneficial.

Dr. S. Solis-Cohen, of Philadelphia, thought the use of ice preferable to antipyretics.

The Chairman thought that thermal diarrhœa is best treated by cold. He did not believe that cholera infantum ever began as a simple diarrhœa, as mentioned by the author. He spoke of the advantage of the use of small doses of morphine and atropine hypodermically, the effects being quick, and a dilatation of the peripheral capillaries thus relieving the intestines. He advocated the use of salines in entero-colitis in preference to castor-oil.

Dr. I. N. Love, of St. Louis, considered that the mother's milk is perfectly sterilized. He spoke of the physical inability of many mothers to nurse as being commoner than moral turpitude, although the latter is often given as a cause.

Dr. E. F. Brush, of Mount Vernon, N. Y., thought that the cases of acute gastro-enteritis in children were produced by the cows eating poisonous weeds.

Dr. W. P. Watson advocated the use of hot water as a drink for children with intestinal disturbances.

Discussion was also participated in by Drs. Whitney, Meyer, Jeffries, and Woods.

Dr. George Wheeler Jones, Danville, O.; a paper by title,

HEART FAILURE IN DIPHTHERIA.

Dr. T. E. Waxham, of Chicago, sent a paper on

INTUBATION OF THE LARYNX WITH REPORT OF CASES,

which was read by the Chairman.

During the past year the author operated 60 times with 28 recoveries, or 46.66 per cent., making the total number of operations 210 with 69 recoveries, or 32.85 per cent. He mentioned the increased percentage of recoveries. The author believed the increased success due to improved methods in feeding, greater experience, and better judgment in the management of the cases. He believed in the adoption of the inclined position with the head down in feeding or when drinking.

During the past year the youngest case operated on was six months old. Those that recovered under two years were aged fifteen months, and two aged eighteen months. Every case except one was characterized by membranous formation.

Dr. H. O. Bates, of Chicago; paper read by title,

INTUBATION OF THE LARYNX VS. TRACHEOTOMY.

Dr. G. W. Gay, of Boston, opened the discussion. He stated that of 327 tracheotomies at the Boston City Hospital, 95, or twenty-nine per cent., recovered; while of 223 intubations at the same institution, 47, or twenty-one per cent., recovered. He considered tracheotomy rather more successful than intubation. The new operation of intubation he thought more popular and easier to do. In 32 instances in which tracheotomy was done after intubation all but three cases died. Personally, he does intubations oftener than tracheotomy, because the tube requires less care. Was not positive about the effect of medicines in diphtheria.

The Chairman had done sixteen tracheotomies and saved four. Believed intubation a better operation in infants below one year of age, but thought that after that period tracheotomy, because of the increase in the strength of the trachea, was preferable.

Discussion was participated in by Drs. Dennison, Brush, and Whitney.

Dr. H. D. Chapin, of New York, read a paper on

PSEUDO-MEMBRANOUS RHINITIS.

The author asked the question if there can be a croupous inflammation of the nasal mucous membrane. Hartmann appears to be the first author to make the announcement that this disease is separate from diphtheria. The author reported two cases that he saw in consultation with Dr. Jonathan Wright. The patients were sisters, aged two and three years' respectively. The elder child was first attacked; she had been well until two weeks before the time when she was seen. She began with a discharge from the nose. Her general condition was good. An examination of the nose showed it to be packed with fibrinous material. The throat was only congested. There was almost no fever, although at one time the temperature reached 101½° F. The child played around. The baby exhibited about the same course of disease, except that the membrane was much more friable and not so abundant. Neither case presented any evidence of sepsis, and examination of the urine was negative. In view of the cases reported and of the literature of the subject, the author concluded that there is such a disease as pseudo-membranous rhinitis, but that it is extremely rare. He would make a diagnosis on constitutional conditions.

The paper was discussed by Drs. Whitney, Cochrane, S. Solis-Cohen, and the Chairman.

Dr. C. R. Early, Ridgeway, Pa., read a paper on

SCARLATINA.

Dr. Talbot Jones, St. Paul, Minn.; paper read by title,

PATHOLOGY AND TREATMENT OF CERTAIN COMPLICATIONS OF SCARLET FEVER.

ELECTION OF OFFICERS.

Dr. I. N. Love, St. Louis, was elected Chairman, and Dr. E. F. Brush, Mount Vernon, N. Y., Secretary.

SECTION ON DERMATOLOGY AND SYPHILOGRAPHY.

First Day, Tuesday, June 25th.

Dr. L. Duncan Bulkley, of New York, Chairman, called the Section to order, and proceeded to read his address, entitled

RECENT ADVANCES IN THE TREATMENT OF DISEASES OF THE SKIN.

Having no date, he said, from which to reckon the *recent* advance in the treatment of diseases of the skin, he looked over the field in a general way, considering the good and bad in treatment. He wished first to call attention to the fact that accuracy of diagnosis was essential to success in the treatment of diseases of the skin; intelligence in the application of remedies could alone secure results which were not disappointing.

It should be borne in mind that the same measures would act differently in different stages of the same disease. In giving results of new remedies one should state the stage at which it had been employed. Antagonistic elements should be removed.

The first advances to be noted were in

MECHANICAL THERAPY.

They were of various forms. The curette was useful in lupus, in the removal of moles, warts, etc. The cutaneous punch was also of use in removal of warts, moles, and acne. Multiple scarification with the scalpel or knife served an excellent purpose in certain cases of lupus, and gave good results in some nævi and rosaceæ.

ELECTROLYSIS

had come to play an important part in the treatment of skin affections, as in destruction of superfluous hair, nævi, and producing absorption of tumors.

The galvanic current was of value in the removal of pain, of herpes zoster, in pruritus, eczema, and conditions calling for the actual cautery. He regarded faradism of doubtful value in acute rosaceæ. Ichthyol and resorcin had not been as fruitful of good results as he had expected on reading Nunna's original contribution on their use. Speaking of strength of these remedies, he said two per cent. of ichthyol was strong enough to begin with, three to ten per cent. of resorcin. They were of use in acute eczema.

Nunna had devoted some time to the development of ointments in plasters, for the purpose of longer retaining the medicament in a given locality. They had not yet been much employed in this country. They were apt to prove too drawing. Plasters with rubber, mostly made in this country, were apt to prove too hot and drawing. Another agent for carrying remedies was made of glycerine and jelly, useful in dry, scaly eczema. Considerable had been expected of lanolin, but its field of application was very limited. Combined with other fatty ingredients in about twenty-five per cent., it often aided in keeping the skin soft. Its use in causing more rapid absorption by the skin was limited. The service rendered by petroleum preparations was undoubtedly great, but he spoke a word of caution against their too common use in ointments. Care was also needed in the use of salicylic acid. It was an efficient parasiticide. Chrysarobin was well known to have the power of dispelling the lesions of psoriasis. Antharobin was nearly as efficient, and did not have its staining effect. The value of naphthol in scabies and menthol in pruritus were mentioned. A combination of camphor and carbolic acid had recently proven valuable in relieving itching of the skin.

Although attention had been principally directed to local measures, yet diet and internal remedies should always be borne in mind when making use of these.

THE TREATMENT OF TINEA TONSURANS.

Dr. W. T. Corlett opened the brief discussion which took place on this subject. He had treated a few cases with bichloride of mercury and applications of galvanism, but there had been no evidence to show that the latter agent had been of any service.

Dr. Garlock did not employ epilation in treatment.

Dr. Frederick J. Leviseur, of New York, thought parasiticides in tinea tonsurans acted by killing the fungi with which they came in immediate contact; that they could be made to penetrate the superficial layers of skin, and meet and destroy the fungus in the cells; and, by irritating the deeper layers, would in the course of time completely eliminate the parasite, and effect a cure. He continued the discussion with a paper,

PROPHYLAXIS OF RINGWORM OF THE SCALP.

European governments took precautions to prevent the spread of this contagious disease, and he had been surprised to witness the apathy shown regarding it in this country. It was to be seen in children going to public schools, and in those in other institutions, and epidemics were not unusual. Failure to diagnosticate it was common. The fungus should be sought for under the microscope, in all doubtful cases. Its presence was conclusive, but failure to find it was of negative value. Some domestic animals were capable of transmitting ringworm to man. He thought there should be in all centres a place for the isolation and free treatment of these cases. The public would thus learn of the contagiousness of the affection, its nature could be better studied by experts.

Dr. Shoemaker had treated some cases in an epidemic by extracting the hair, others without it, and the latter seemed to recover more quickly. He was in accord with the author, however, with regard to the importance of prophylaxis. Oleate of mercury and oleate of copper had shown their power in destroying the parasites. Many of the patients who were anæmic responded better to treatment under improved hygiene and diet.

Dr. Bulkley had known the affection to spread very rapidly in institutions. In some cases it was extremely rebellious to treatment. He had been treating one case during months without apparent benefit. The child was robust. In half the cases the disease was a trivial affair, responding readily to treatment.

Dr. Wykoff, speaking of treatment, had cured a case by chrysarobin after other measures had failed.

Dr. D. W. Prentiss, of Washington, read a paper, entitled,

CHANGE IN THE COLOR OF THE HAIR FROM THE INTERNAL USE OF PILOCARPINE.

He first referred to two cases of his own already published, the first in the *Philadelphia Medical Times*, July 2, 1881, in a lady aged twenty-five, who employed pilocarpine to relieve uræmic symptoms resulting from anuria. Her hair changed from light brown to black. The other he published in the *Therapeutic Gazette*, April 15, 1889, that of a lady aged seventy-two, who took jaborandi for disease of the kidneys, whose eyebrows changed from white to black.

The author then quoted cases from German and other medical literature, in which the use of pilocarpine had caused the hair to grow where it had fallen out, in some instances the new hair having a different color from the old.

It had been doubted by many eminent in the profession whether the hair ever changed color suddenly. To settle that question, he had searched the library of the Surgeon-General's office, and found records of indisputable cases. In some the change in color had been sudden, in some not so rapid; in some it was due to fright or other mental influence. He went on to show the change in color of the hair, feathers, or bones of different animals, according to the food which they received, or change of seasons.

His conclusions were: 1. In the human subject the only agent, as far as he was aware, which had been charged with changing the color of the hair when administered internally was jaborandi. 2. Cayenne pepper, in changing the color of canary birds to orange. 3. The change in color of parrots by the Indians of the Amazon, from green to yellow and red; by feeding with the fat of a certain kind of fish. 4. The restoration of certain birds to their original brilliant colors at the zoological garden, Amsterdam, by feeding a kind of shrimp or small crustacean. 5. The effect of madder in staining the bones of pigs red, and of poke-berries coloring crows' bones purple. It might be of interest to study the influence of diet and habit upon the color of hair in different nations of men.

Dr. Bulkley had found pilocarpine cause the growth of hair in alopecia areata in a few cases, while it failed in others.

Dr. J. V. Shoemaker, of Philadelphia, read an abstract of a paper, entitled

SOME NOTES ON HOANG-NAN.

The drug was allied to nux vomica, and produced similar symptoms when administered to animals. It stimulated the functions of the skin, and while he had found it of some benefit in affections with this indication, yet in general it had not fulfilled the expectations excited by some enthusiasts. It had a high reputation in leprosy. He had had opportunity to use it in but one case. Its effects on the disease were negative. It could be obtained in fluid extract or tincture. Of the former preparation he gave not more than thirty drops, before meals.

SECOND DAY, WEDNESDAY, JUNE 26TH.

ELECTION OF OFFICERS.

DR. I. E. ATKINSON, of Baltimore, was elected Chairman, and Dr. W. T. Corlett, of Cleveland, was re-elected Secretary.

THE ETIOLOGY OF LEPROSY, A CRITICISM OF SOME PRESENT VIEWS.

DR. P. S. ABRAHAMS, of London, sent the paper, which was read by the Secretary. The supposed etiological factors of late years were three: heredity, diet of fish, contagion. The two first named were rejected by the author, who quoted the views of American authors. together with the statistics of leprosy in this country. Hutchinson almost alone held that the disease was caused by the consumption of fish, especially that which was partially decomposed. The author held the view now commonly entertained, that leprosy was contagious, although only mildly so.

The Chairman, Drs. Garlock, Fordyce, and others who made some remarks, could give no evidence from personal observation of contagion, although they believed the disease to be transmitted in that manner.

DR. CORLETT said there were some lepers in the Paris and London hospitals all the time; they were not isolated; the disease was regarded as contagious only in the way that syphilis was contagious.

DR. L. D. BULKLEY opened a discussion on

THE INDICATIONS FOR, AND DURATION OF, THE TREATMENT OF SYPHILIS,

by propounding certain questions: 1. How early should treatment of syphilis begin? 2. Should one wait until positive diagnosis could be made? 3. How long should the treatment continue? 4. How soon could the patient be allowed with safety to marry? 5. When the disease had become thoroughly established, should treatment be continued longer than the presence of symptoms? If so, how much longer?

The discussion was continued in a paper sent by DR. EPHRAIM CUTTER, of New York,

THE POSITIVE DIAGNOSIS OF SYPHILIS,

read by his son, who said he could confirm all that was stated in the paper. The diagnosis was based on the examination of the blood under a good microscope for the crypta syphilitica, oval spores of a copper color, which had peculiar movements in the blood. One of experience could not mistake the spore for any other which might happen to be in the blood. Its presence afforded unmistakable evidence of syphilis.

DR. SEILER, of Philadelphia, said that just ten years ago he put the same question to Dr. Ephraim Cutter which he did to-day to his son, and received the same answer, that he could not state the measurements of the spore in question. Dr. Seiler thought it was simply broken up blood-corpuscles.

DR. BRUSH, of Philadelphia, had been unable to verify the observations of Dr. Cutter, as had Dr. Matthewson, of New Jersey, and others who spoke.

DR. SEILER said with regard to the treatment of syphilitic gummata, that he thought it should be continued long after disappearance of the lesions, say two years.

DR. CORLETT preferred to await active treatment until positive diagnosis of syphilis could be made. In a few cases in which he had destroyed the syphilitic chancre, the subsequent course of the disease seemed to have been less severe than usual. Mercury was the only drug with which he had been enabled to obtain permanent relief from syphilitic manifestations.

DR. GARLOCK had found mercurial inunctions sometimes prevent the appearance of secondary symptoms.

DR. FLEISCHNER, of New Haven, observed that some cases of syphilis were known to run a mild course. That being true, he doubted whether a uniform rule should be made of treating all cases in the same heroic way, continued always two or more years after cessation of symptoms. Treat each case individually.

THE CHAIRMAN thought it not safe to leave off treatment until two or three years. He sometimes consented to marriage within a year after contraction of syphilis, if during the last six or eight months there had been absence of symptoms, and, in such cases, the disease had not been given to the wife or offspring.

DR. CARL SEILER, of Philadelphia, then read a paper entitled

THE RELATIONS BETWEEN ACNE AND DISEASES OF THE NASAL CAVITY.

The past ten years he had observed a great many cases of acne in connection with diseases of the nose, the acne coming and going with the appearance and disappearance of nasal irritation. Acne punctata was observed to be almost invariably associated with atrophic rhinitis, while acne rosacea was associated with hypertrophic inflammation of the nose. It was known that the blood-supply of the turbinated tissue was intimately connected, through the nerve-supply, with that of the skin of the face. The author believed the function of the erectile tissue of the turbinated bones and elsewhere to be that of taking up the overflow of blood of neighboring parts observed in mechanical or nervous irritation. Relief of the nasal difficulty, in many of the cases which had come under his care, caused the acne to disappear without other treatment, local or internal. The connection between the skin affection and that of the mucous membrane of the cavity, seemed to be both mechanical and nervous, or reflex, the one reacting upon the other.

DR. E. N. BRUSH, of Philadelphia, read a paper on

DERMATITIS EXFOLIATIVA,

in which he narrated two cases of desquamation of the skin in insane patients in the institutions of New York, the falling off of the epidermis being preceded by very general pigmentation of the skin. The cases suggested a possible relation between the skin disease and that of the nervous system.

DR. GARLOCK related a case of

EXFOLIATIVE DERMATITIS

in a man, which he attributed to a depreciated vital state, caused by overwork and bad sanitary surroundings.

DR. FLEISCHNER reported a case of

PTYRIASIS RUBRA,

caused by rapid changes from a hot, dry air, to the cold air of a refrigerator; Dr. Flandrau, the case of a lady, who a number of times had a reddening or inflammation of the entire body, followed by falling off of the cuticle in fine particles, possibly due to the influence of financial losses.

THE CHAIRMAN mentioned two cases in girls in the Skin Hospital, one of whom died after a stay in the hospital of four years. In this case a thorough post-mortem examination was being made. The other patient had been in the hospital six years. Her entire body was as red as a boiled lobster. Nothing had proven of benefit. She kept the surface covered constantly with vaseline.

SECTION ON LARYNGOLOGY AND OTOLOGY.

FIRST DAY, TUESDAY, JUNE 25TH.

W. H. DALY, M.D., CHAIRMAN.

THE CHAIRMAN read a short address on

MARKING AN EPOCH IN LARYNGOLOGY.

He referred to his formerly expressed remarks in regard to the necessity of the otologist possessing skill in dealing with diseases of the larynx and naso-pharynx, and especially the surgical treatment of the latter, thus associating the specialty of otology with that of laryngology, rather than with that of ophthalmology, with which it has

been usually associated in the past. This placing otology in its proper relations is what constitutes the epoch in these specialties.

Dr. John McKenzie, of Baltimore, reported a case of

LYMPHOID TUMOR, ORIGINATING IN THE FLOOR OF THE RIGHT PYRIFORM SINUS,

and threatening suffocation when the patient was in a recumbent posture.

The patient, a clergyman, aged forty-two, had never had any throat trouble, and was otherwise perfectly healthy. There was no assignable cause for the growth, which, on microscopical examination, was found to consist entirely of the lymphoid tissue of the pharynx, recently described by Waldeyer and his pupils.

The tumor was removed by first exciting gagging, so as to throw it as far as possible up toward the back of the tongue. It was then caught with a pair of laryngeal forceps, and with these as a guide the écraseur was passed over the tumor and it was rapidly cut through.

Dr. McKenzie remarked that growths of various kinds are occasionally found on the pillars of the fauces, glosso-epiglottic fossa, and upper pharynx; but tumors originating in the pyriform sinus are exceedingly rare, and that the growth described is unique.

Dr. Solis-Cohen said that it was rather curious that this unique growth originated in the position in which so few cases of lipoma had their origin.

Dr. W. Freudenthal, of New York, read a paper on

THE CONNECTION BETWEEN CHRONIC DISEASE OF THE UPPER AIR-PASSAGES AND HERNIA.

In continuation of his observations, formerly published, the author found that in accordance with the frequency of nasal disease herniæ are found in the following proportions: In the United States, in 50 out of 1,000 conscripts; in France, in 22.87 out of 1,000 conscripts; in Italy, in 16.61 out of 1,000 conscripts; in Austro-Hungary, in 14.09 out of 1,000 conscripts; and in Germany in less than 14 out of 1,000 conscripts.

Furthermore, the author proved the correctness of his theory against Dr. Schpinger, who had affirmed the contrary opinion.

In women hernia are rarer than in men, on account of the weaker stress used in the act of coughing, clearing the throat, and the like.

Dr. J. H. Bryan, of Washington, D. C., read a paper on the

DIAGNOSIS AND TREATMENT OF DISEASES OF THE ANTRUM.

The author remarked that of the surgical affections suppurative inflammation plays the most important part; until recently it was regarded as a rare condition. It occurs generally after the first dentition. Among its causes are: 1, traumatism; 2, acute infectious diseases, 3; syphilis; and 4, extension of inflammation from carious teeth. The condition called hydrops antri generally results from catarrhal affections of the nose, in which the secretion is seromucous; but where it is muco-purulent it results from extension from diseased teeth.

There are four conditions, after eliminating wounds and exanthemata, that may give rise to pus in the nasal chambers: 1, foreign bodies; 2, disease of bone; 3, secretion of pus from the antrum of Highmore; and 4, secretion of pus from the frontal sinus and anterior ethmoid cells.

The indication for treatment of abscess of the antrum is to let out the pus, drain, and disinfect; if the abscess point anywhere, it should be opened there. The tendency of practice is to open these abscesses through the nose, returning to the method of Hunter, after a century, during which the practice has been to open through the mouth.

The operation most approved is Cooper's—that through the alveolar process. It has these advantages: 1, It affords the best means for draining and disinfecting; and 2, it can be performed without anæsthetics. On the other hand, it offers facilities for the entrance of food and bacteria, and it sometimes necessitates the extraction of a sound tooth. Mikulicz opens through the lateral wall of the nose where it is thin. This operation gives easy drainage and washing of the cavity, and there is little danger of entrance of foreign particles.

Local treatment is very important, including irrigation by mildly disinfectant fluids. Permanganate of potash best overcomes fetor. A syringe specially adapted to washing out the antrum from this point was shown by the author, and several cases were reported in illustration of the subject.

Dr. J. B. Lippincott, of Pittsburg, said that he was under the impression that purulent disease of the antrum was frequently due to morbid conditions of the teeth. Abscess of the orbit frequently arises from the antrum, which has itself its primary cause in carious teeth.

Dr. E. Fletcher Ingalls, of Chicago, had treated several cases of the kind. One had been cured after about three weeks' treatment, having been washed out repeatedly with peroxide of hydrogen, through the normal opening into the nasal cavity. However, he had three cases under observation where every form of treatment had been inefficient in checking the purulent discharge. They had worn tubes in the alveolar process for periods of five, three, and two years respectively, and in none of them did there appear to be any dead bone, as the discharge was not offensive.

The Chairman remarked that he had had considerable experience in opening abscesses of the antrum, and that the operation was not without grave danger at times, and in proof referred to a well-known medical man who lost his life by it.

(To be continued.)

Stable Bichloride Solutions.—Dr. Robert T. Morris, of this city, writes: "Bichloride of mercury solution is frequently made in a wash-bowl; and blood squeezed from sponges into this solution renders the bichloride inert in a few moments. It is a well-known fact that several of the acids in solution with bichloride of mercury will prevent this destruction of the salt in the presence of albuminous fluids, and at my suggestion Mr. Painter, of the Brunswick Pharmacy, keeps in stock tablets composed of bichloride of mercury, tartaric acid, and chloride of ammonium. One of these tablets dissolves in a pint of water in about ninety seconds, making a 1–2000 solution of the bichloride that is stable in the presence of albumen.

Prolonged Gestation.—Dr. E. J. Abbott, of St. Paul, Minn., writes: "*À propos* of a case of prolonged gestation noted in your issue of May 18th, I wish to report a still more prolonged case. The last menstrual period was from April 3 to 6, 1888. Symptoms indicating a possible pregnancy began to manifest themselves about May 1st. Quickening was thought to be felt the latter part of September, and was pronounced early in October. Delivery took place April 20, 1889, more than a year after the cessation of the menses, and more than six months after quickening had become unmistakable. The child was delivered with forceps and weighed ten and one-half pounds."

An Antiseptic Pocket-Case.—Dr. George F. Leick, of Cleveland, writes: "In your issue of May 18th, Dr. Bradshaw, of Orange, N. J., makes a plea for a pocket-case meeting the rules and requirements of modern surgery. Such a case is made by Chr. Schmidt, of Berlin. Being entirely of metal (German silver) all the instruments being nickel-plated, bistouries in one piece, silk contained in the handle of the needle-holder it is what Dr. Bradshaw asks for. The case is known as Bergmann's. I have carried one during the past year and am entirely satisfied with it."

THE MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE FORTIETH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

THE meeting of the American Medical Association, held this week in Newport, a full report of which, prepared by our special correspondents, we present in this issue of THE MEDICAL RECORD, was in some respects a notable success. The attendance, especially of Western members, as compared with that of some of the previous meetings, was small; but what the meeting lacked in numbers was made up by enthusiasm, for notwithstanding the attractions in the way of afternoon excursions offered by the profes sion of Newport, the meetings of the several Sections were well attended. Some of the papers presented, notably in the Surgical and Laryngological Sections, were of unusual interest, and constitute valuable contributions to medical literature. The lack of hotel accommodations caused considerable individual discomfort, and has demonstrated the unwisdom of selecting any but the larger cities for the places of meeting of the Association. In view of this fact we cannot but regret that the Association has decided to assemble next year in Nashville, in preference to either Philadelphia or Detroit, which cities were under consideration, but were passed over by the committee. Nashville is a beautiful city, and the hospitality of its citizens is famed; but, we fear, as has happened at Newport, that it will be impossible to provide comfortably for all the visitors. The subject of higher medical education received its share of attention, but seemingly failed to arouse that degree of enthusiastic approval which its importance demanded. The annual plea in behalf of the Rush monument was made, with somewhat more than the ordinary force, Dr. Pepper aiding it in his address; but the response in the way of contributions to the fund was not as encouraging as it might have been. We would remind the committee, however, that this is the common experience of monument committees, and if they will only have patience and perseverance they or their successors may live to see the fruition of their hopes.

The profession of Newport should receive the thanks of the Association for the most creditable manner in which the duties of a host were performed. The entertainments were varied, but unfortunately the most attractive of them were offered in the afternoon, at which time the members were busy in Section work. It is to be regretted that the Western representation was not larger; but in spite of this drawback the meeting was one of unusual interest, and must be classed among the most successful ever held by the Association. The choice of President for the coming year was a most happy one, and we extend our congratulations to both the Association and its new President upon the honor which has come to both in this fortunate selection.

THE NOTIFICATION OF INFECTIOUS DISEASES AND IMPRISONMENT OF PHYSICIANS.

SYSTEMATIC writers agree that while there is no one symptom pathognomonic of yellow fever, yet its diagnosis is almost always possible. Such diagnosis is made easier since the blood-test for the malarial plasmodium makes the exclusion of malarial fever so much more certain. In view of these facts and of the slight contagious properties of yellow fever, the Brooklyn Board of Health is entitled to the severest criticisms for its stupid and blundering conduct in imprisoning a physician because he failed to report a case of malaria which the Board considered one of yellow fever. The facts, we believe, are that Dr. Duncan, of the steamship Colon, was attacked by a remittent fever, and was attended by Dr. Bogert. The Brooklyn Board of Health got knowledge of the case, removed the sick man to Swinburne's Island, quarantined the patient's house, and imprisoned Dr. Bogert in it. Dr. Duncan, despite the peril of removal during the height of his illness, has fortunately recovered, and Dr. Bogert, after being arrested, imprisoned, and threatened with a suit, was finally set free, though not until he had suffered much inconvenience.

Another patient on the same steamer, who was supposed at first to have yellow fever, was removed, while still sick, from her hotel, and subsequently died.

These cases, which suggest one not unlike them that occurred in this city some months ago, if they continue, will soon become a reproach and scandal to preventive medicine. It ought to be possible to keep out dangerous diseases without slaughtering innocent victims of malarial fever, and without working public feeling into a hysterical state over every sporadic case of an infectious character. New York is in no danger of a yellow-fever epidemic. With our present sanitary arrangements such a thing is almost an impossibility; and it is nothing less than brutal to rush suspected cases, while at the height of the disease, to some remote quarantine station.

Apart from this comes another question, of immediate personal interest to the profession. Must a physician be subjected to arrest for not reporting cases of remittent fever to the local authorities? If so, we have reached a curious stage in State medicine. It should be borne in mind that the State has no constitutional right to lay the responsibility of notification upon the doctor. He is not a public servant; and he has received no special privileges from the State. The laws that exact from him the duty of notification of infectious diseases are purely arbitrary, and have not been contested by physicians because of the public spirit of the medical profession. If these laws are, however, to be so interpreted as to be a continuous source of annoyance and danger to personal liberty, they will cease to be enforced. We trust that the Brooklyn Board of Health will make proper amends to Dr. Bogert, and learn some lessons in diagnosis and discretion from his case.

TOBACCO-CHEWING AS A PREVENTIVE OF PHTHISIS.

TEXAS is not only a great State topographically and superficially, but it is the source of ideas whose freshness and originality continually surprise and instruct one. The hygienists of Europe have been for some time past laboriously studying the best methods of preventing phthisis, with the result of reducing everything to a laborious, uncertain, and disagreeable battle with an expectoration. A Texas physician, Dr. J. Walter Cock, of Waco, by a flash of genius renders unnecessary the scrubbings, disinfectants, and spit-cups of science, and shows that phthisis may be kept off by the simple process of chewing tobacco. He says (Texas *Courier-Record*): "From observation and inquiry extending over the past twenty-five years, I can announce that chewing tobacco from about the ages of twenty to thirty, by those predisposed to tuberculosis of the lungs, will prevent its development. I suppose this opinion, or rather conviction, has in my experience been verified in some hundreds of instances."

He adds: "My present views are that tobacco chewing acts as a protective agent by counteracting the plethoric conditions of adolescence, and that it acts also locally as a curative agent in destroying the tubercle bacillus."

Dr. Cock specifically insists that it is chewing, not smoking, which keeps off phthisis. The arguments for his views are not perhaps entirely conclusive, although we are informed that more will be contributed to the subject later. They represent the large experience of a gentleman who lives in a region where the prophylactic value of tobacco juice can, it is said, be abundantly tested.

We take it for granted that the ladies of Texas do not chew tobacco, and we are surprised that Dr. Cock does not bring into his argument the fact that, in Texas, the mortality from phthisis is considerably less among men than women, being in 1880, 615 males to 752 females, while in a northern State, like New Jersey, where tobacco-chewing has largely given way to more insidious vices, the male mortality is the greater.

Dr. Cock's arguments, when they have been a little further fortified, will bring dismay into the camp of the anti-tobacconists, and perhaps will cause a slight flutter in the gentler sex, who must be not only denied the juicy privilege of saving their lives by masticating narcotics, but must endure the somewhat unpleasant spectacle of seeing their husbands, brothers, and sweethearts discolor their mucous membranes in order to avoid tuberculosis.

MISSOURI PHYSICIANS AND THE STATE BOARD OF HEALTH.

THE Missouri State Board of Health has been obliged to adjourn *sine die*, because the Legislature refused to appropriate any money for its expenses.

This action of the Legislature is not so much a reproach to the lawmakers as it is to the physicians of the State of Missouri. They must be cast in a poor mould, indeed, if they have not sufficient character and influence to impress upon the public the importance of State medicine and sanitary work. We read in the Kansas City *Medical Record* that the Missouri State Medical Association met at Springfield on May 22d, and that the subject of the State Board of Health was presented to the Society, but too late for action. It appears, also, from the comments of our contemporary, that Missouri physicians have been too anxious to get a State Board whose chief purpose should be to drive out quacks. Naturally, to the average legislator the medical support of this particular branch of sanitary science is not entirely disinterested. In the organization of a Health Board it can be but one factor, and apparently in Missouri it must be a minor one.

HYDROPHOBIA.

IT is getting somewhat trying to the patience to read the vapid and foolish reiterations of certain estimable gentlemen who don't believe in Pasteur, or hydrophobia, or preventive inoculations. The ebullitions of weak judgment and inconsequent logic can be tolerated occasionally, but they should not be allowed to overburden current medical literature. There is nothing better established in science than the existence of rabies, both in man and the lower animals. The investigations of careful and conservative experts, such as Mr. Victor Horsley, support the views and endorse the work of M. Pasteur. Those that deny its value should first show themselves capable of judging experimental work, and cease to juggle with figures, or work themselves into rhetorical fury over questions which they so conspicuously misunderstand.

News of the Week.

PROFESSOR KAHLER has been installed as Professor of the Practice of Medicine in the University of Munich, succeeding the late Professor Bamberger.

THE WOMAN'S MEDICAL COLLEGE OF BALTIMORE has adopted a three years' compulsory course.

THERE HAS BEEN AN EPIDEMIC OF TRICHINOSIS at Lille, France, from eating pork.

THE RIGHTS OF THE REVIEWER.—Medical reviewers will breathe a little easier on learning that in the suit for libel, brought by Dr. Tibbetts against *Nature*, the jury brought in a verdict of one farthing damages. The suit was on account of a very severe criticism on Dr. Tibbetts' book, which appeared in *Nature*.

THE PANCREAS AND DIABETES.—Drs. J. Von Mering and O. Minowski have found that the extirpation of the pancreas in dogs uniformly causes a persistent diabetes.

THE BALTIMORE PHYSICIANS have contributed $186 to their suffering professional brethren of Johnstown.

THE NEW YORK HOSPITAL LIBRARY.—At the last meeting of the board of governors of the Hospital a fine portrait of the esteemed librarian, Dr. John L. Vandervoort, was presented to the board by Dr. George L. Peabody, who originated the movement among the friends of the institution to procure the portrait.

DR. THEODORE P. MAYO, well known as surgeon in the Army of Northern Virginia during the war, died at Richmond, Va., on June 21st, aged fifty-nine.

INOCULATION OF CANCER.—It is stated in *La Semaine Médicale* that Hanau, of Zurich, has succeeded in transferring the carcinoma of a rat to two animals of the same species.

THE FRENCH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE meets at Paris, August 8th to 14th. The Medical Section is presided over by M. Trelat.

MEDICAL LIBRARY OF THE BOSTON CITY HOSPITAL.

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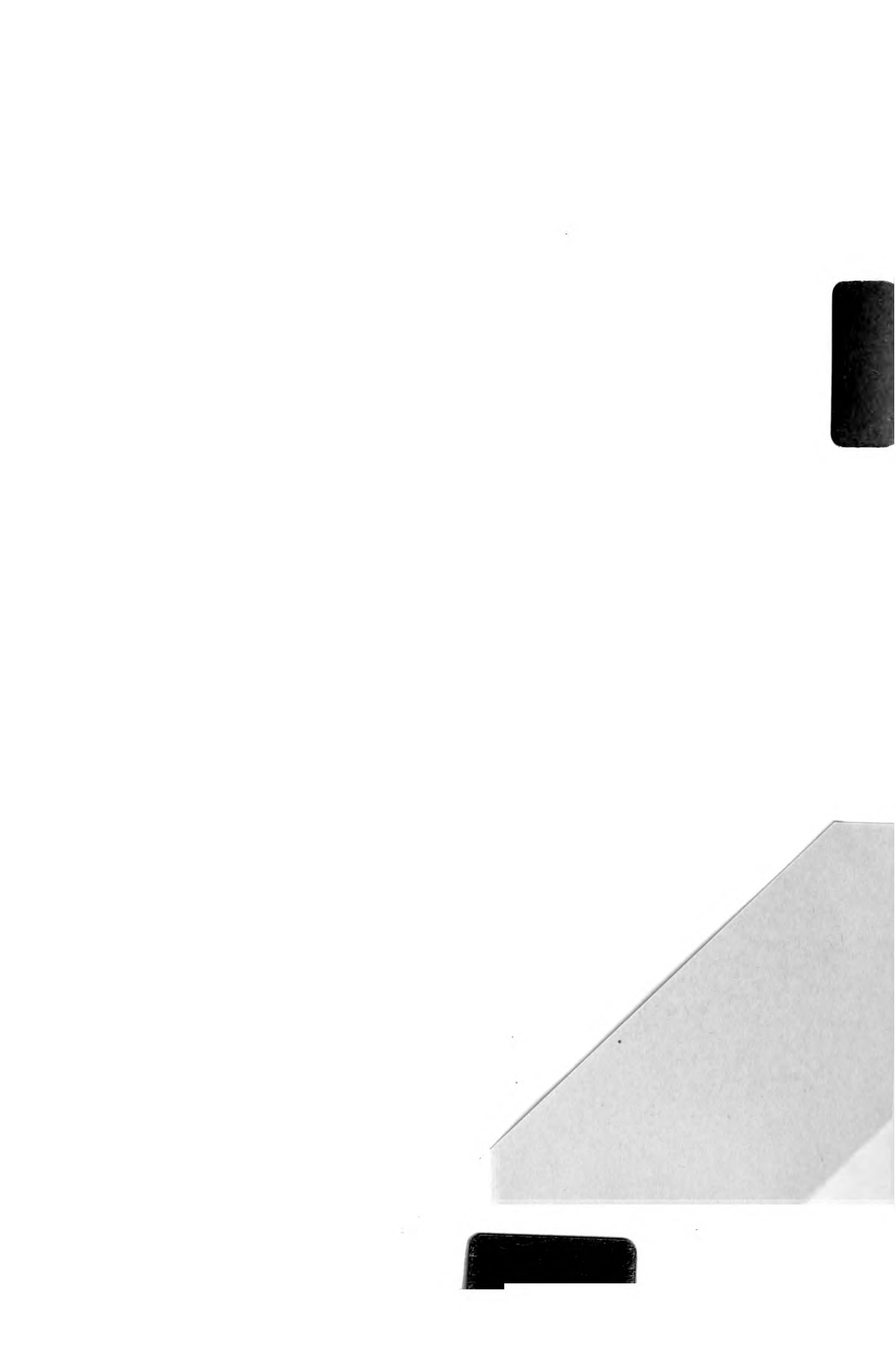

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